AIWA®

S/M Code No. 85-045
DATE OF ISSUE 10/1985-S

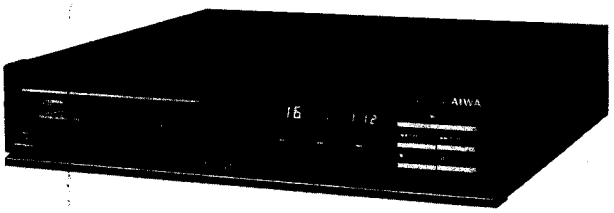
SERVICE MANUAL

TYPE. HB,UB,CB,EB,KB,GB

MODEL NO.

COMPACT DISC PLAYER

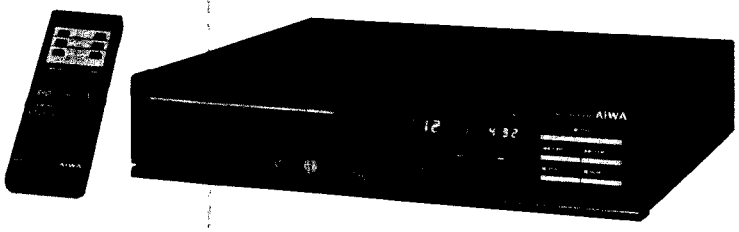
DX-770



MODEL NO.

COMPACT DISC PLAYER

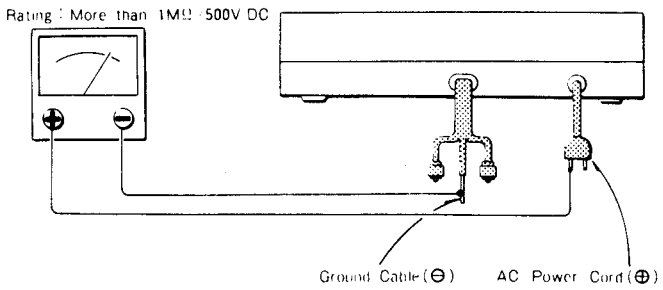
DX-1500



Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. **No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.**
2. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
3. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
4. **The following matters shall be maintained as they are, when repairing.**
   1) Soldering of lead-wire ends
      * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
      * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) Location of all kinds of insulators
   5) Setting of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

   Measuring Point



6. **General instructions for mechanism repair**
   1) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
   2) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

SPECIFICATIONS

Type: Compact disc digital audio system
Disc: Compact disc
Scanning method: Non contact optical scanner (semiconductor laser application)
Laser: Semiconductor laser (λ=780 nm)
Rotation speed: Approx. 500 rpm — 200 rpm (CLV)
Error correction: Cross Interleave, Read Solomon Code
No. of channels: 2 channels
D-A conversion: 16-bit linear
Frequency response: 2 Hz—20 kHz ±1.0 dB
Harmonic distortion: 0.004%
Dynamic range: 90 dB or more
Channel separation: over 90 dB
Wow/Flutter: Unmeasurable
Output terminal (LINE OUT): Terminal type: Pin jack
Maximum output level: 2V (50kΩ)
Load impedance: 10kΩ or more
Headphones: 0 — 12mW (0dB/32Ω)(DX-1500 ONLY)

Disc specifications

Playing time: Approx. 60 minutes (max. 74 minutes)
Dimensions: Diameter 120 mm, thickness 1.2 mm
Track pitch: 1.6 μm
Sampling frequency: 44.1 kHz

Remote controller (DX-1500 ONLY)

Clock frequency: 38 kHz
Power source: 3V (SUM-3, R6P)
Power consumption: 30 mA or less (average during transmission)
10 μA (non-operating)
Transmission angle: ±40°
Transmission distance: Approx. 7 m
Maximum external dimensions: 50(W)×18(H)×160(D)mm
Weight: 100 g (including batteries)

Power and Miscellaneous

Power supply:
DX-1500H
AC 120V/220V/240V, 50/60 Hz
DX-1500E, Z
AC 220V, 50/60 Hz
DX-1500K, G
AC 240V, 50/60 Hz
DX-1500U, C
AC 120V, 60 Hz
DX-770H
AC 120V/220V/240V, 50/60 Hz
DX-770E, Z
AC 220V, 50/60 Hz
DX-770K, G
AC 240V, 50/60 Hz
DX-770U, C
AC 120V, 60 Hz

Power consumption:	**DX-1500H, E, Z**	12W
	DX-1500K, G	12W
	DX-1500U	16W
	DX-1500C	16W
Power consumption:	**DX-770H, E, Z**	12W
	DX-770K, G	12W
	DX-770U	16W
	DX-770C	16W

Dimensions: 330(W)×74(H)×306.5(D)mm
Weight: 3.4 kg
Accessories: Stereo pin cord (1)
Synchro-recording cord (1)

- Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 0.6 mW*
     * This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
   - Classification: Class IIIb
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

LASER WARNING LABELS

The labels shown below are affixed.

1. Protective Housing Label
   WARNING Label 1 . . . . . (E,K model)

CLASS-1
LASER-PRODUCT

2. WARNING Label 4 . . . . . (E,K,G model)

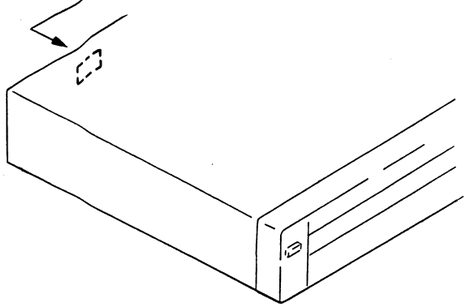
LASER APERTURE

3. WARNING Label 3 . . . . . (E,K,G model)

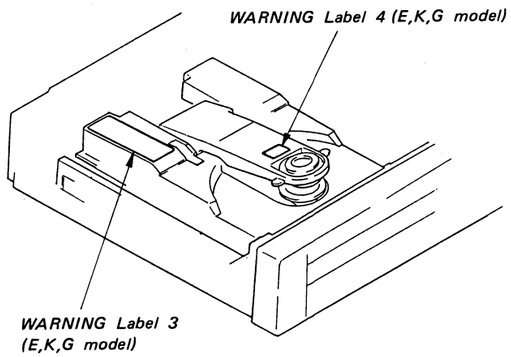
CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

WARNING Label 1 (E,K model)



WARNING Label 4 (E,K,G model)



WARNING Label 3 (E,K,G model)

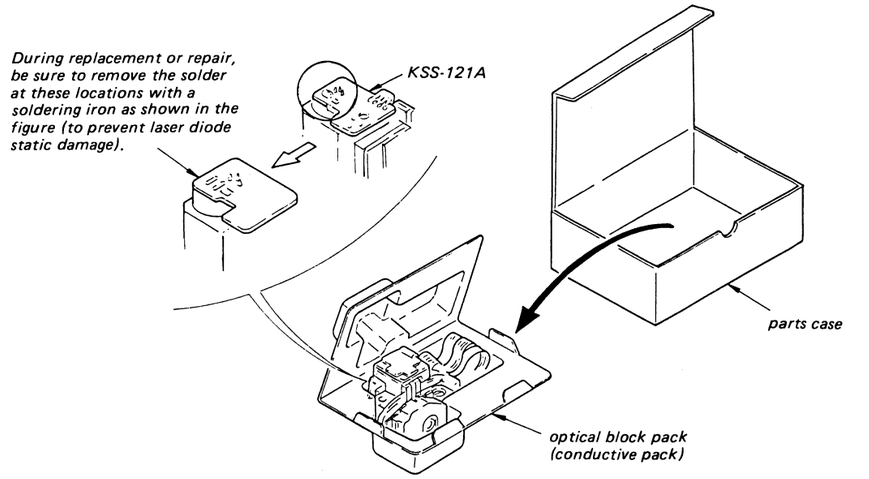
The power SW is provided at the secondary side. Accordingly, all the works should be conducted with the AC cord being disconnected.

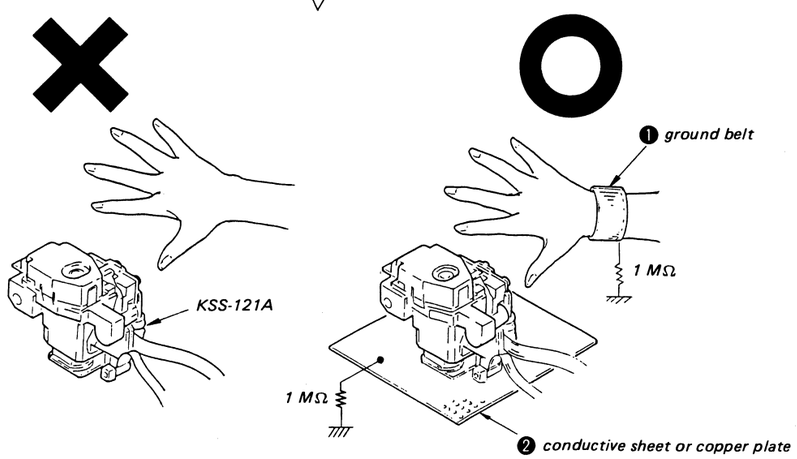
NOTES ON HANDLING THE OPTICAL BLOCK (KSS-121A)

The laser diode inside the optical block may be damaged by static electricity in clothes or the human body.

The following procedures are required when unpacking and repairing KSS-121A in order to avoid static electricity damage.

1. Body grounding
   Be sure to wear a ground belt (less than $10^8\,\Omega$) in order to release the static electricity stored in the body.
2. Workbench grounding
   Place a conductive sheet (less than $10^9\,\Omega$) or copper plate on the bench where KSS-121A is to be placed to ground it.
3. Static electricity in the clothing will not be released by the ground belt, so be careful not to let KSS-121A touch clothing.





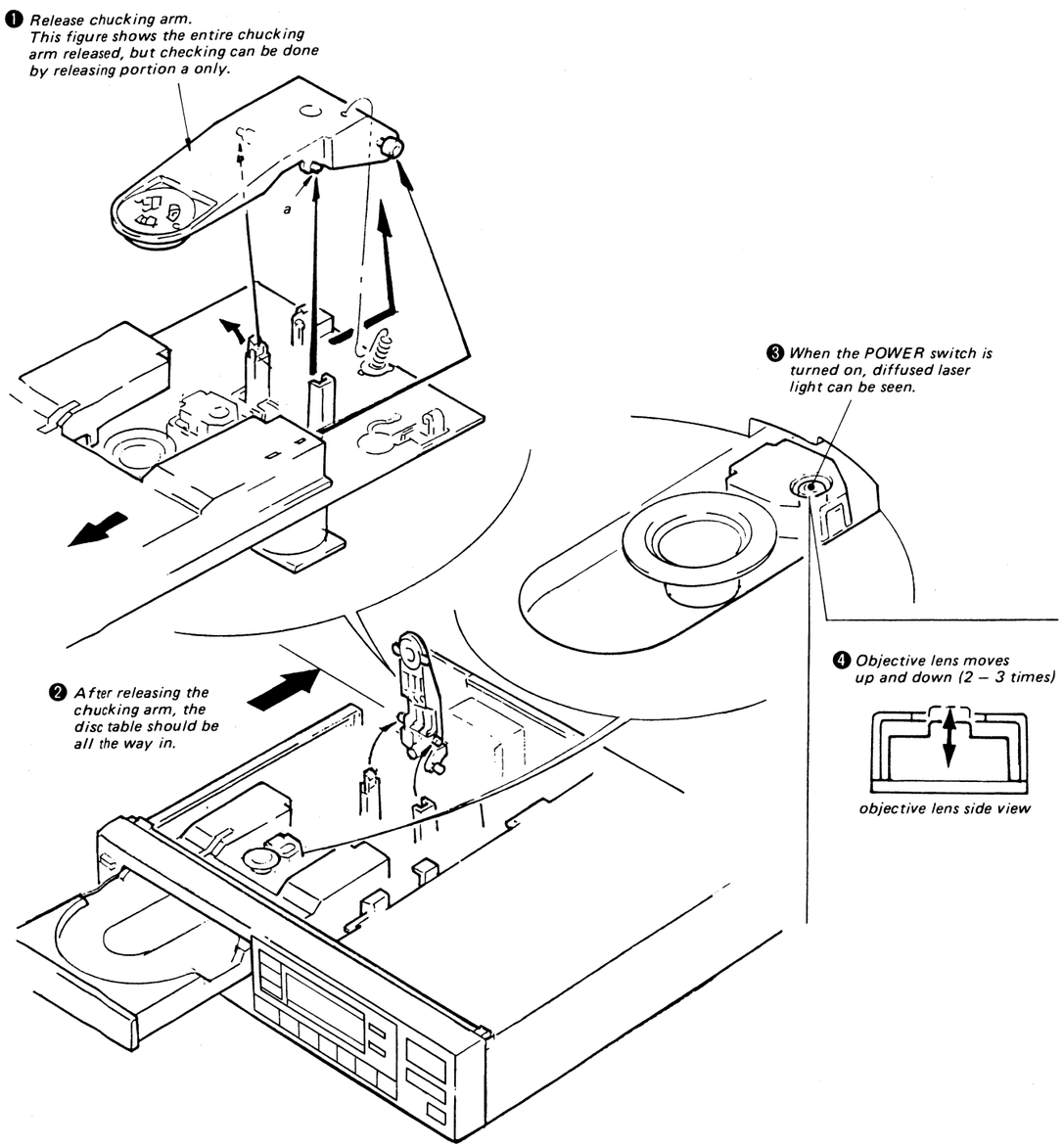
DX-770, DX-1500 H, U, C, E, K, G

NOTES ON CHECKING LASER DIODE LIGHT EMISSION

The laser beam on this set is converged by the objective lens in the optical block so that it focuses on the disc reflective surface. Therefore, when checking light emission of the laser diode, be sure to keep the eyes more than 30 cm away from the objective lens.

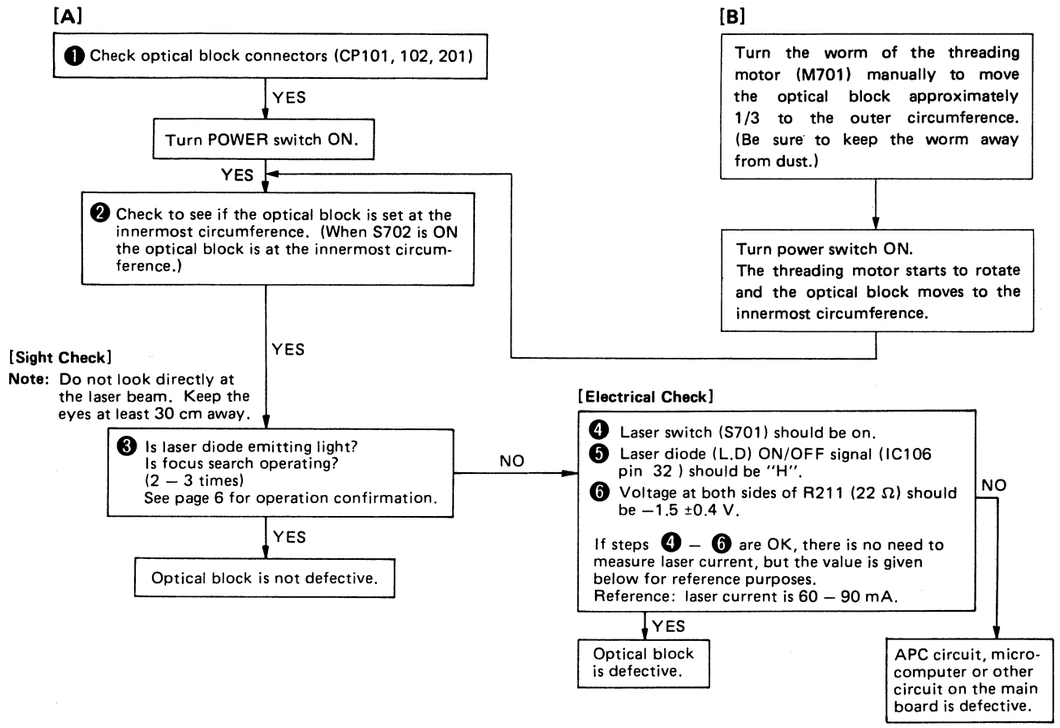
CHECKING LASER DIODE AND FOCUS SEARCH OPERATION

Check if the following operation is performed by looking at the objective lens after releasing the chucking arm and turning the POWER switch on. (Optical block should be at the innermost circumference when checking.)

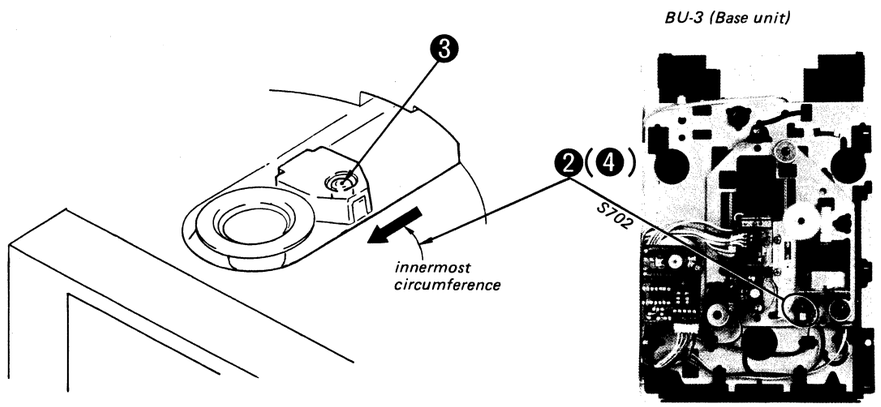


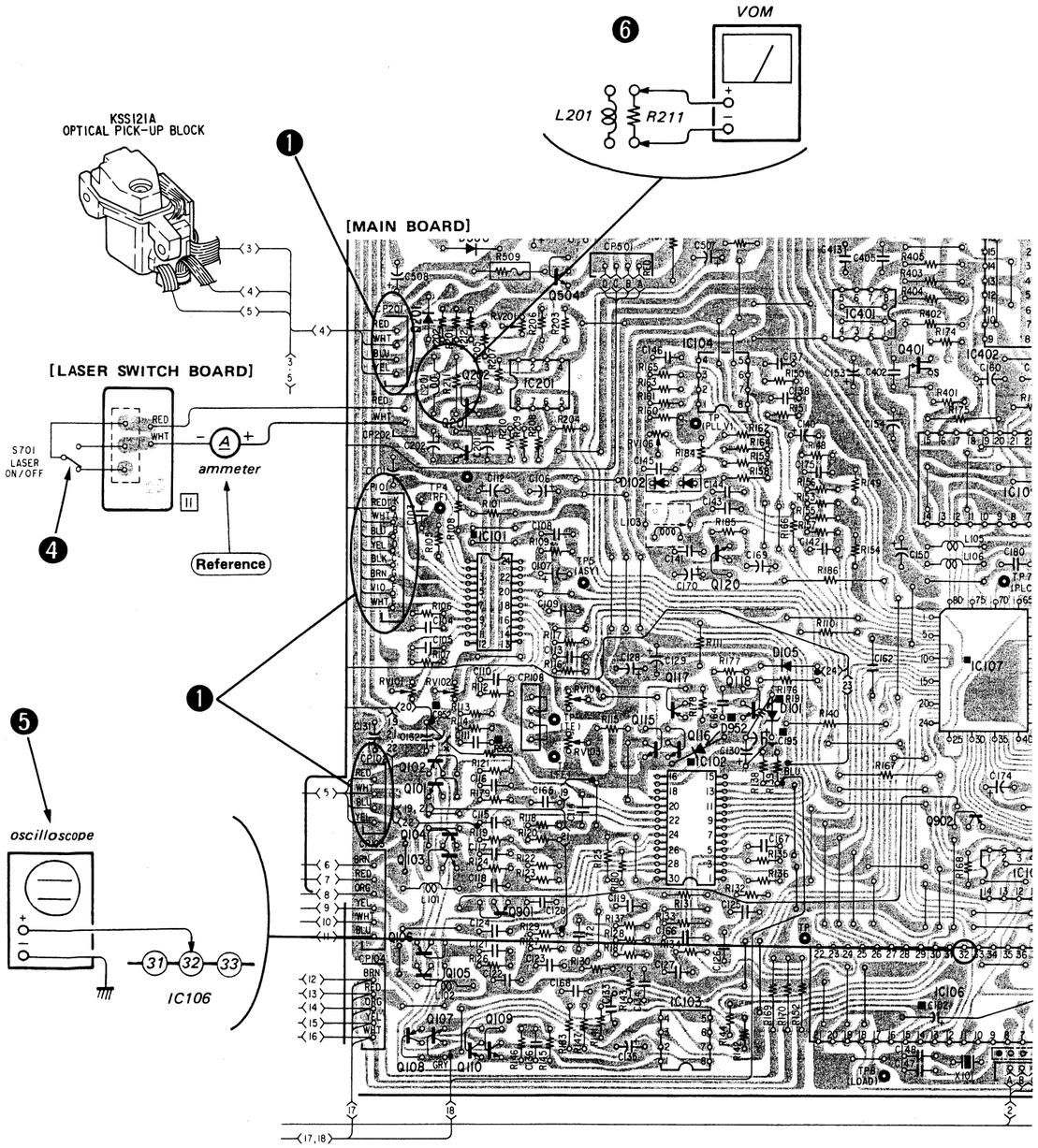
DIAGNOSIS OF OPTICAL BLOCK (KSS-121A) BREAKDOWN

1. Follow the procedure below to determine if the optical block has broken down.
When the judgement can not be made with [A], reconfirm with [B].



2. The checking locations listed above are shown here.




KSS121A
OPTICAL PICK-UP BLOCK
[MAIN BOARD]
[LASER SWITCH BOARD]
S701
LASER
ON/OFF
ammeter
Reference
VOM
L201
R211
oscilloscope
IC106
IC101
IC102
IC104
IC107
Q504
Q120
Q902
Q401
P201
P202
P203
P204
P205
P206
P207
P208
P209
P210
P211
P212
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P214
P215
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P227
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P232
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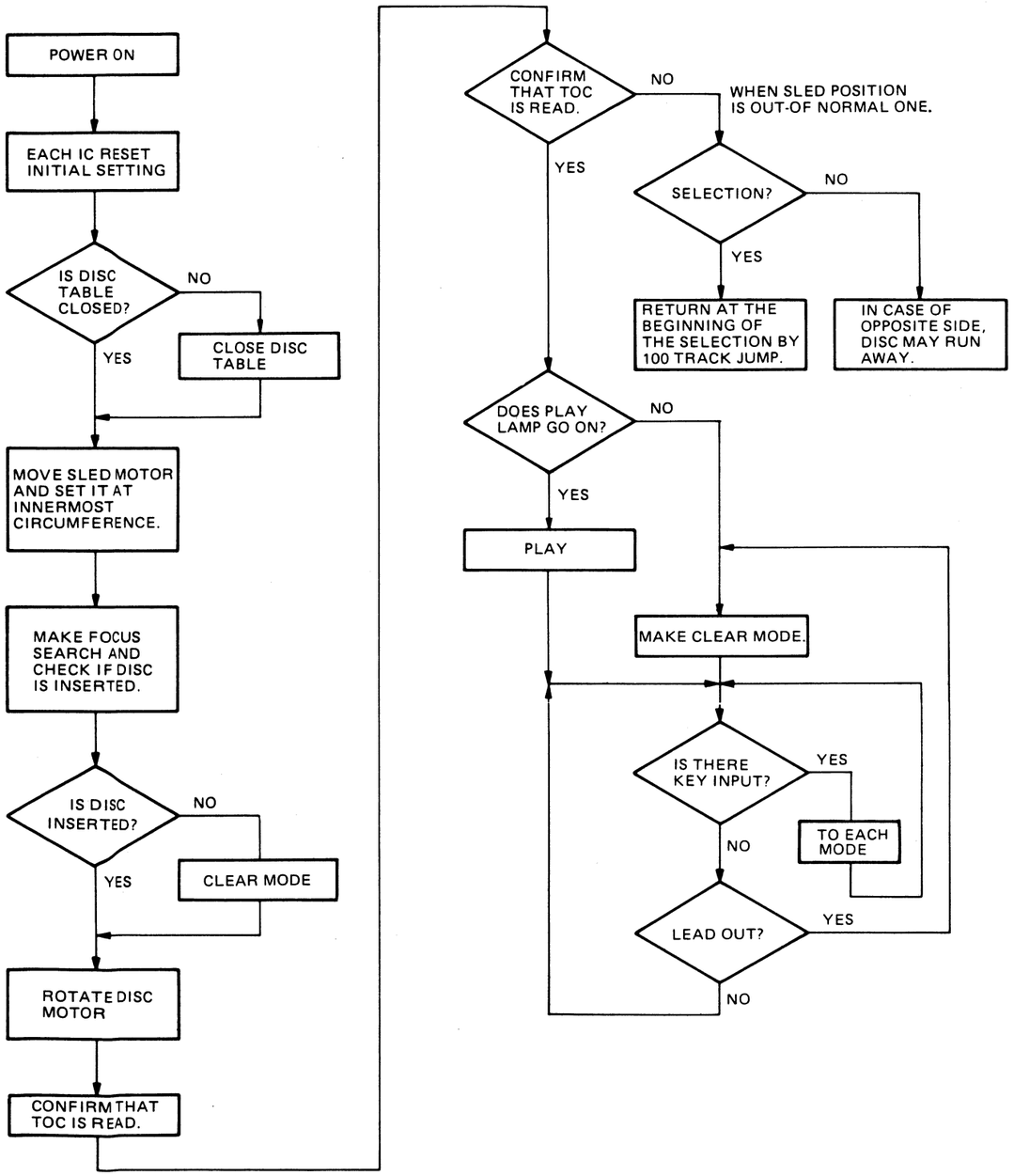
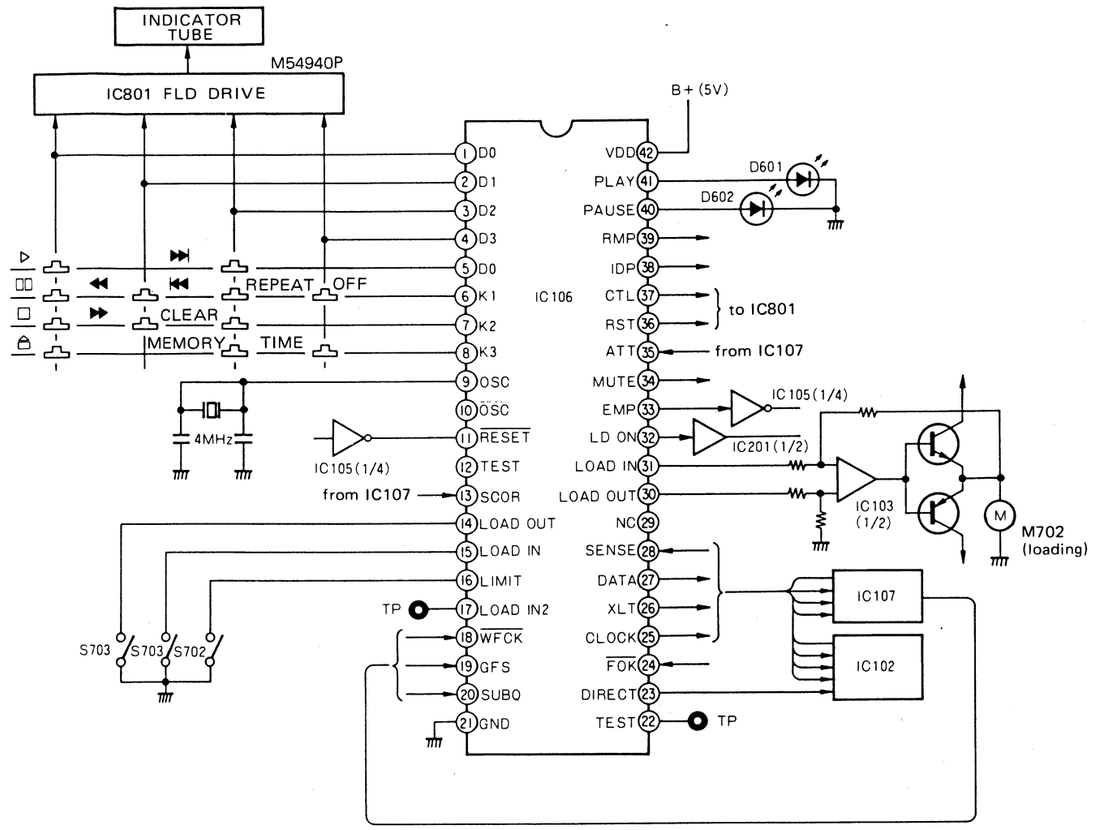
P236
P237
P238
P239
P240

The illustration below shows flow chart of simple operation after power is ON.



IC106

IC106 (MSM6406A-76RS) is a 4 bit system controller, and performs digit signal output to the function keys, SUBQ signal take-in and processing, display tube and servo system control, etc. The pin functions are shown in the diagram below.



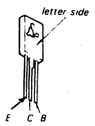
Pin Functions (IC106, MSM6406A-76RS)

Pin No.	I/O	Symbol	Function
1 – 4	OUT	D0/S0 – D3/S3	Function key digit signal output pin and data output pin to display tube drive IC (M54940P).
5 – 8	IN	KEY 0 – 3	Function key input.
9 – 10	IN	OSC_0 – $\overline{OSC_1}$	Clock input pin (crystal oscillator 4.0 MHz).
11	IN	$\overline{RESET}$	Reset input pin. Input during power on and initializes.
12	–	TEST	Test pin when microcomputer is shipped. Normally open.
13	IN	SCOR	SUBQ sync signal input pin.
14	IN	OUT SW	Detects disc table open.

Pin No.	I/O	Symbol	Function
15	IN	IN SW	Detects disc table closed.
16	IN	LIMIT SW	Detects 2-axis device in start position.
17	–	ADJ SW	Prevents focus servo from being forced ON. Normally open, grounded when observing S curve, etc.
18	IN	$\overline{\text{WFCK}}$	$\overline{\text{WFCK}}$ input pin.
19	IN	GFS	High is input here when CX23035 is reading data in correctly. When this pin goes low for more than 5 continuous seconds during play, the disc is judged as defective and is forcible ejected. However this does not occur when pin (22) is low. Also, a low pulse is generated sometimes during play, but this is not a problem.
20	IN	SUBQ	SUBQ signal input pin.
21	–	GND	Ground.
22	–	VS/TRK	Normally open, but grounded when operating the CD player in adjustment mode. When open, the CLV-A (auto mode) CLV command is applied to CX23035, and when grounded, CLV-S (run-up mode) is applied. Also, when this pin is grounded, the disc is not ejected even when pin (19) GFS is low for more than 5 continuous seconds.
23	OUT	DIRECT	Output pin to CX20108. Used when track jump state is inverted.
24	IN	$\overline{\text{F.OK}}$	Low is input here when the 2-axis device can read in data. Focusing is judged using this input and the F.Z.C. (focus zero cross) signal input to pin (28) SENSE and focus servo is turned on.
25	OUT	CLOCK	Clock output pin for sending commands to CX20108 and CX23035. Normally high level. 8 clocks are output for 1 command.
26	OUT	LATCH	Output for reporting the end of the command transmission to CX20108, CX23035. Normally high level.
27	OUT	DATA	Output pin for commands to CX20108, CX23035. Commands are composed of 8 bits, 4 address bits and 4 data bits.
28	IN	SENSE	Responses return here corresponding to the commands sent to CX20108 and CX23035 after the commands are executed.
29	–	NC	Empty pin. Normally open, but timer play is enabled by grounding this pin (option).
30	OUT	LOAD OUT	Output to open disc table.
31	OUT	LOAD IN	Output to close disc table.
32	OUT	LD. ON	Output to turn laser diode on.
33	OUT	EMPHASIS	Outputs and switches analog circuit by EMPHASIS signal within the SUBQ signal.
34	OUT	MUTE	Outputs digital mute to CX23035.
35	IN	CRCF	Results of matching SUBQ signal twice are input from CX23035. Goes high when matched, low when not matched. By using this pin, matching twice operation is not needed inside the microcomputer and access processing, etc. is easier.
36	OUT	RST	Reset output to display tube drive IC (M54940P).
37	OUT	CTL	Clock output to display tube drive IC (M54940P).
38	OUT	IDP	Output for character data lighting up to display tube driver IC (M54940P). This turns "DISC", "SCAN", etc. inside the display tube ON/OFF.
39	OUT	RMP	Function key display lamp output.
40	OUT	PAUSE	
41	OUT	PLAY	
42	–	Vcc	Power supply input pin.

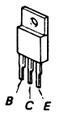
2SA1015
2SC1815
2SC2878

2SA1175

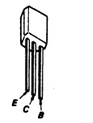


2SB548
2SD414

2SB734
2SD774



2SB834



2SC2458
DTA144ES
DTC114ES
DTC143TS
DTC144ES

2SK152

2SK246

NOTES:

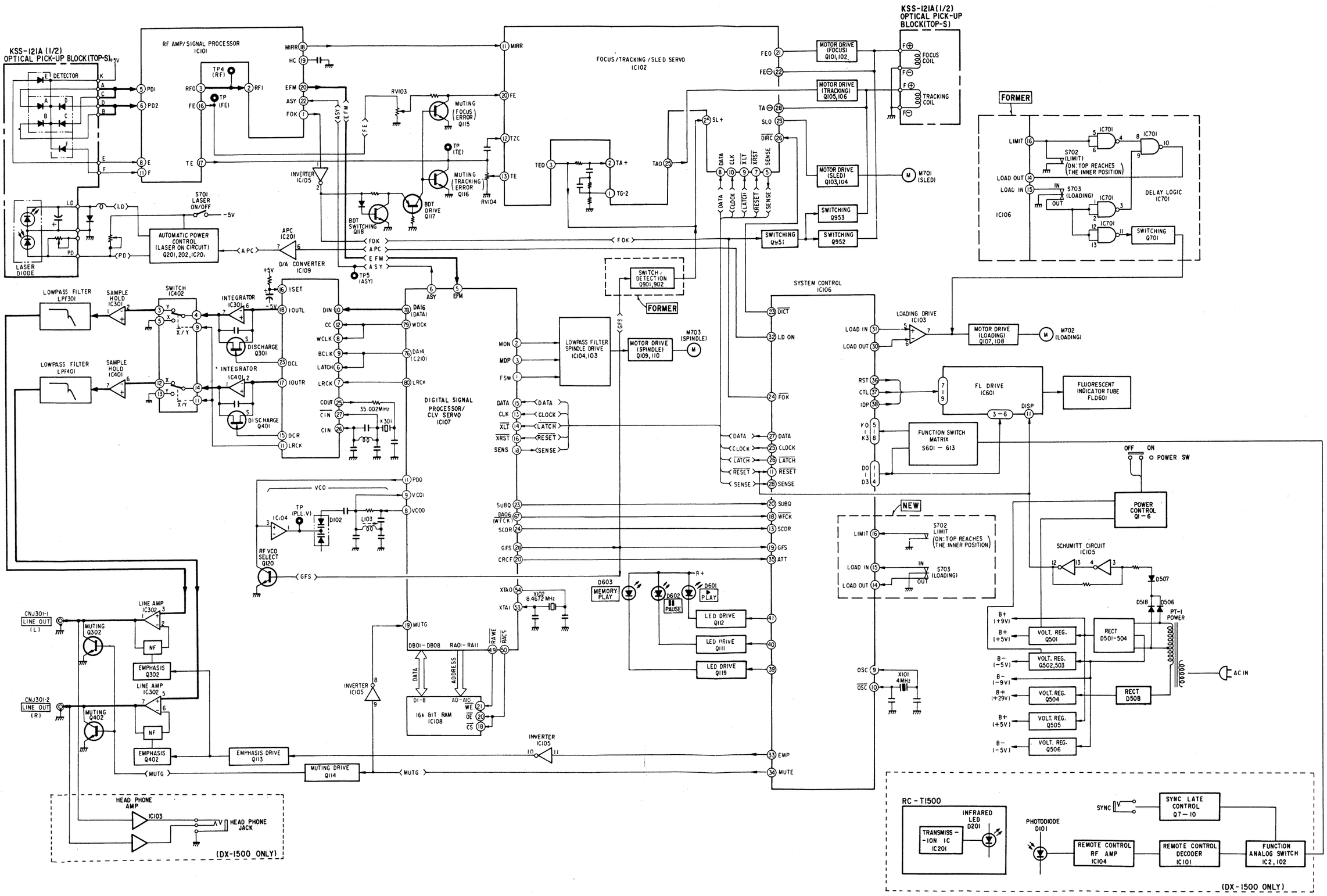
1) ▬▬ B (+) power supply
   ▬ ▬ ▬ B (–) power supply
2) ➡ Signal path
3) The voltage is the reference value measured with a tester (50k-ohms/V DC) when there are no signals. But ( ) is with AM reception or recording.
4) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
   - Semiconductor ceramic
   - For temperature compensation (SH)
8) Explanation of symbols
   - (M) Mylar capacitor
   - (A) Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - (LL) Low-leakage capacitor
   - (T) Tantalum capacitor
   - (S) Styrol capacitor
   - (TF) TF capacitor (Mylar)
   - (MF) Film capacitor
   - (J) Ceramic sol Capacitor
   - (SL) Ceramic capacitor (For temperature compensation)
   - No mark Ceramic capacitor
   - (SC) Semiconductor capacitor
   - Printed resistor
   - Fuse resistor
   - Nonflammable resistor
   - (LN) Low noise resistor
   - (MT) Metal resistor

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.

BLOCK DIAGRAM



ELECTRICAL MAIN PARTS LIST

- ★ -mark means less required items and availabilities may be limited.
- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.

CAPACITORC
No mark, U, UF: μF
P, PF : pF

COILS
MMH: mH
UH : μH

FUSE
MMA:mA

Ref.No.	Part.No.	Description
	=== IC ===	
ϟ	98-752-001	IC,CX20017
ϟ	98-752-010-80	IC,CX20108
ϟ	98-752-010-90	IC,CX20109
ϟ	98-759-912-52	IC,CX23035
	87-020-038	IC,HD14053BP
	98-759-913	IC,MB8416-20LPF
	98-759-921	IC,MSM6404A-83RS
	87-020-096	IC,M4066BP
	87-020-537	IC,M54940P
	98-759-900	IC,NE5532P
	87-027-739	IC,NJM4556D (DX-1500 ONLY)
	87-027-235	IC,NJM4558D
	87-020-021	IC,TC40H004P
ϟ	87-027-298	IC,TC4001 (DX-770 ONLY)
	87-020-564	IC,TC4011BP
	87-020-565	IC,TC9149P (DX-1500 ONLY)
	87-020-538	IC,UPC1474HA (DX-1500 ONLY)
	98-759-990-82	IC,UPC4082C
	=== TRANSISTOR ===	
	87-026-219	TRANSISTOR,DTA144ES-TP
	87-026-239	TRANSISTOR,DTC114ES-TP
	87-026-223	TRANSISTOR,DTC143TS
	87-026-223	TRANSISTOR,DTC143TS-TP
	87-026-208	TRANSISTOR,DTC144ES-TP
	89-110-155	TRANSISTOR,2SA1015,GR
	98-729-117	TRANSISTOR,2SA1175TP-F
	89-205-483	TRANSISTOR,2SB548-Q
	89-502-465	TRANSISTOR,2SK246-GR
	89-408-805	TRANSISTOR,2SK880-GR
	=== MAIN, SPINDLE MOTOR, THREADING MOTOR, LASER SW, WOBBLING, LOADING MOTOR CIRCUIT BOARD SECTION ===	
C103	* 91-130-479	CAP,TF (MYLAR) 0.0047MF 5% 50V
C109	* 91-130-489	CAP,TF (MYLAR) 0.033MF 5% 50V
C115	* 91-136-165	CAP,FILM 0.1MF 5% 50V
C118	* 91-130-489	CAP,TF (MYLAR) 0.033MF 5% 50V
C119	* 91-124-184	CAP,ELECT BP 3.3MF 20% 50V
C120	* 91-136-169	CAP,FILM 0.22MF 5% 50V
C122	* 91-130-475	CAP,TF (MYLAR) 0.0022MF 5% 50V
C123	* 91-130-487	CAP,TF (MYLAR) 0.022MF 5% 50V
C125	* 91-136-161	CAP,FILM 0.047MF 5% 50V
C126	* 91-136-169	CAP,FILM 0.22MF 5% 50V
C127	* 91-130-489	CAP,TF (MYLAR) 0.033MF 5% 50V
C130	* 91-131-373	CAP,TANTALUM 22MF 10% 16V
C137	* 91-130-481	CAP,TF (MYLAR) 0.0068MF 5% 50V
C138	* 91-136-165	CAP,FILM 0.1MF 5% 50V
C141	* 91-102-848	CAP,CERA-SOL 180PF RH 5% 50V
C142	* 91-102-647	CAP,CERA-SOL 39PF PH 5% 50V
C143	* 91-102-753	CAP,CERA-SOL 36PF UJ 5% 50V
C146	* 91-130-483	CAP,TF (MYLAR) 0.01MF 5% 50V
C159	* 91-102-513	CAP,CERA-SOL 18PF CH 5% 50V
C164	* 91-136-161	CAP,FILM 0.047MF 5% 50V
C165	* 91-136-169	CAP,FILM 0.22MF 5% 50V
C168	* 91-136-169	CAP,FILM 0.22MF 5% 50V
C172	* 91-124-183	CAP,PB 2.2MF 20% 50V
C175	* 91-136-165	CAP,FILM 0.1MF 5% 50V
C178	* 91-101-005	CAP,CERAMIC 0.022MF
C179	* 91-161-974	CAP,CERA-DI 0.1MF 20% 16V
C180	* 91-161-974	CAP,CERA-DI 0.1MF 20% 16V
C182	* 91-101-005	CAP,CERAMIC 0.022MF
C307	* 91-130-470	CAP,TF (MYLAR) 820PF 5% 50V
C308	* 91-130-470	CAP,TF (MYLAR) 820PF 5% 50V
C309	* 91-130-479	CAP,TF (MYLAR) 0.0047MF 5% 50V
C314	* 91-130-282	CAP,PP 0.0024MF 5% 100V
C315	* 91-130-288	CAP,PP 0.0043MF 5% 100V
C316	* 91-130-279	CAP,PP 0.0018MF 5% 100V
C317	* 91-130-280	CAP,PP 0.002MF 5% 100V
C318	* 91-130-280	CAP,PP 0.002MF 5% 100V
C407	* 91-130-470	CAP,TF (MYLAR) 820PF 5% 50V
C408	* 91-130-470	CAP,TF (MYLAR) 820PF 5% 50V
C409	* 91-130-479	CAP,TF (MYLAR) 0.0047MF 5% 50V
C414	* 91-130-282	CAP,PP 0.0024MF 5% 100V
C415	* 91-130-288	CAP,PP 0.0043MF 5% 100V
C416	* 91-130-279	CAP,PP 0.0018MF 5% 100V
C417	* 91-130-280	CAP,PP 0.002MF 5% 100V
C418	* 91-130-280	CAP,PP 0.002MF 5% 100V
C501	* 87-010-206	CAP,ELECT KS 2200-25V (DX-1500 ONLY)
C502	* 87-010-206	CAP,ELECT KS 2200-25V (DX-1500 ONLY)
C704	* 91-130-483	CAP,TF (MYLAR) 0.01MF 5% 50V
CNJ301	91-562-830	PIN JACK 2P
D101	87-027-384	DIODE HZ5CLLTP
D102	98-719-902	DIODE KV1236Z
D506	98-719-108	DIODE 1SS202-T2
D507	98-719-108	DIODE 1SS202-T2
D508	98-719-200	DIODE 11E2TA2
D509	98-719-200	DIODE 11E2TA2
D510	87-027-472	DIODE,ZENER HZ30-1LTP
D515	87-027-332	DIODE,ZENER HZ6B1LTP
D516	87-027-332	DIODE,ZENER HZ6B1LTP
D701	98-719-107	DIODE 1SS202-1
L101	* 91-408-117	MICRO INDUCTOR 10UH 10%
L102	* 91-408-117	MICRO INDUCTOR 10UH 10%
L103	* 91-426-212	COIL RF
L104	* 91-408-551	MICRO INDUCTOR 1UH 10%
L105	* 91-408-563	MICRO INDUCTOR 10UH 10%
L106	* 91-408-563	MICRO INDUCTOR 10UH 10%
L201	* 91-408-117	MICRO INDUCTOR 10UH 10%
LPF301	91-464-523	FILTER UNIT,LOW
LPF401	91-464-523	FILTER UNIT,LOW
M701	9A-460-830-8A	MOTOR ASSY,THREAD
M702	9A-460-830-7A	MOTOR ASSY,LOADING
M703	9X-491-041	MOTOR ASSY,SPINDLE
R148	* 91-215-449	RES,MF 15K 1/6W 1%
R149	* 91-215-453	RES,MF 22K 1/6W 1%
R154	* 91-215-441	RES,MF 6.8K 1/6W 1%
R155	* 91-215-441	RES,MF 6.8K 1/6W 1%
R163	* 91-215-453	RES,MF 22K 1/6W 1%
R164	* 91-215-453	RES,MF 22K 1/6W 1%
R211	* 91-214-689	RES,MF 22 1/4W 1%
R502	* 91-215-448	RES,MF 13K 1/6W 1%
R503	* 91-215-445	RES,MF 10K 1/6W 1%
RV101	* 91-230-529	SFR 470K
RV102	* 91-226-773	SFR 22K
RV103	* 91-226-773	SFR 22K
RV104	* 91-226-703	SFR 10K
RV106	* 91-230-521	SFR 2.2K
RV201	* 91-226-773	SFR 22K
X101	91-527-822	CERAMIC RESONATOR
X102	91-567-301	CRYSTAL RESONATOR
X103	91-527-948	VIBRATOR,CRYSTAL
	=== FRONT CIRCUIT BOARD SECTION ===	
C7	* 87-012-105	CAP,CERA-SOL,0.022
C8	* 87-018-131	CAP,CERA-SOL SS 1000P
D11	* 87-027-671	LED,LN417YP (PAUSE)
D12	* 87-027-543	LED,LN317GP (PLAY)
D13	* 87-027-542	LED,LN217RP (MEMORY PLAY)
FL1	* 84-714-604	INDICATOR TUBE
SW3	87-031-771	TACT SW (▶▶)
SW4	87-031-771	TACT SW (◀◀)
SW5	87-031-771	TACT SW (CLEAR)
SW6	87-031-771	TACT SW (MEMORY)
SW7	87-031-771	TACT SW (▶▶|)
SW8	87-031-771	TACT SW (|◀◀)
SW9	87-031-771	TACT SW (REPEAT)
SW10	87-031-771	TACT SW (TIME)
SW11	87-031-771	TACT SW (PLAY)
SW12	87-031-771	TACT SW (PAUSE)
SW13	87-031-771	TACT SW (STOP)
SW14	87-031-771	TACT SW (OPEN/CLOSE)
	=== POWER CIRCUIT BOARD SECTION ===	
C1	* 87-018-134	CAP,CERA-SOL SS 0.01
C2	* 87-018-134	CAP,CERA-SOL SS 0.01
C4	* 87-018-134	CAP,CERA-SOL SS 0.01
C5	* 87-018-134	CAP,CERA-SOL SS 0.01
C7	* 87-012-105	CAP,CERA-SOL 0.022
C11	* 87-010-400	ELECT 50-0.47 SME
C113	* 87-018-134	CAP,CERA-SOL SS 0.01 (DX-1500 ONLY)
C114	* 87-018-134	CAP,CERA-SOL SS 0.01 (DX-1500 ONLY)
D1	87-020-110	DIODE 1SS177
D2	87-020-110	DIODE 1SS177 (DX-770 ONLY)
D3	87-020-110	DIODE 1SS177
D4	87-020-110	DIODE 1SS177
D5	87-020-110	DIODE 1SS177
D6	87-020-110	DIODE 1SS177
D7	87-020-110	DIODE 1SS177
D8	87-020-110	DIODE 1SS177
D9	87-020-110	DIODE 1SS177
D10	87-020-110	DIODE 1SS177
D14	87-020-110	DIODE 1SS177
D15	87-020-110	DIODE 1SS177
D16	87-020-110	DIODE 1SS177
D17	87-020-110	DIODE 1SS177
D18	87-020-110	DIODE 1SS177
D19	87-020-110	DIODE 1SS177
D20	87-020-110	DIODE 1SS177 (DX-770 ONLY)
J1	87-032-892	JACK,2.5
J2	* 82-137-609	13P CONNECTOR SOCKET (DX-770 ONLY)
	=== SW CIRCUIT BOARD SECTION ===	
SW2	84-714-614	PUSH SW (POWER)
	=== RX CIRCUIT BOARD SECTION (DX-1500 ONLY) ===	
C110	* 87-010-374	ELECT 47-10V
C104	* 87-010-378	ELECT 16-10 SME
C105	* 87-010-378	ELECT 16-10 SME
C106	* 87-010-378	ELECT 16-10 SME
C108	* 87-014-069	CAP,PP 3300P
C109	* 87-014-069	CAP,PP 3300P
D101	87-020-536	PHOTO DIODE PH-309
L101	* 84-715-603	COIL RX
L102	* 84-715-603	COIL RX
	=== PHONE CIRCUIT BOARD SECTION (DX-1500 ONLY) ===	
C115	* 87-018-131	CAP,CERA-SOL SS 1000P
C116	* 87-018-131	CAP,CERA-SOL SS 1000P
J101	87-049-634	PHONE JACK 3.5 ST
RV101	84-715-602	VOL 10KAX2 (PHONE VL)
	=== MISCELLANEOUS ===	
	98-848-023	OPTICAL PICK-UP BLOCK ASSY
⚠	87-034-578	AC CORD (U,C ONLY)
⚠	87-034-877	AC CORD (E ONLY)
⚠	87-034-892	AC CORD (G ONLY)
⚠	87-034-958	AC CORD (H,HU ONLY)
⚠	87-034-975	AC CORD (K ONLY)
⚠	* 87-085-184	AC CORD BUSH D (H,U,C,HU ONLY)
⚠	* 87-085-185	AC CORD BUSH (E,K,G ONLY)
⚠PT1	87-714-616	POWER TRANSFORMER (H,HU ONLY)
⚠PT1	87-714-617	POWER TRANSFORMER (U,C ONLY)
⚠PT1	87-714-618	POWER TRANSFORMER (E ONLY)
⚠PT1	87-714-619	POWER TRANSFORMER (K,G ONLY)
S701	91-554-205	PUSH SW (LASER ON/OFF)
S702	91-570-202	LEAF SW (LIMIT)
S703	91-570-203	LEAF SW (LOAIDNG)
⚠SW1	87-031-586	ROTARY SW (H ONLY) (VOLTAGE SELECTOR)

⚠ Safety compone
This symbol is giver
the safety of the pi
special safety specif
ponent with this sy
designated part.

C-MOS IC handlin

The C-MOS IC's const
by static electricity ar
ing articles.

1. Need to be put on
   and to be wrappe
   deposit.
2. To use solder iror
   consumption for s
   second.
3. Do not perform a
   the circuit voltages
4. The ICs on the e
   MOS IC symbol ma

Note; Combination

The parts on the ele
asterisk (*) are supp
Therefore, they will
necessary, please order

(DX-1500 ONLY)

Combination circu

PCB-Front
PCB-POWER
PCB-SW
PCB-PHONE
PCB-RX

(DX-770 ONLY)

Combination circu

PCB-Front
PCB-POWER
PCB-SW

escription

-1500 ONLY) ===

S 1000P
S 1000P
ST
ONE VL)

P BLOCK ASSY
NLY)
Y)
Y)

ONLY)
Y)
(H,U,C,HU ONLY)
E,K,G ONLY)

MER (H,HU ONLY)
MER (U,C ONLY)
MER (E ONLY)
MER (K,G ONLY)

ON/OFF)
)
NG)
NLY)
TOR)

⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

C-MOS IC handling precaution

The C-MOS IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.
4. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (Ⓜ).

Note; Combination Circuit Board

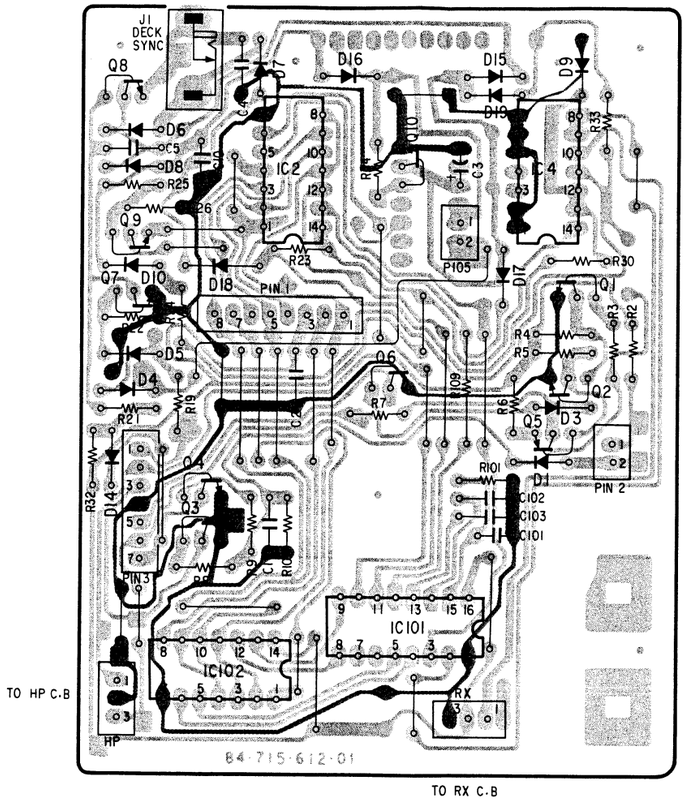
The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will no be supplied separately. If this becomes necessary, please order the entire circuit board.

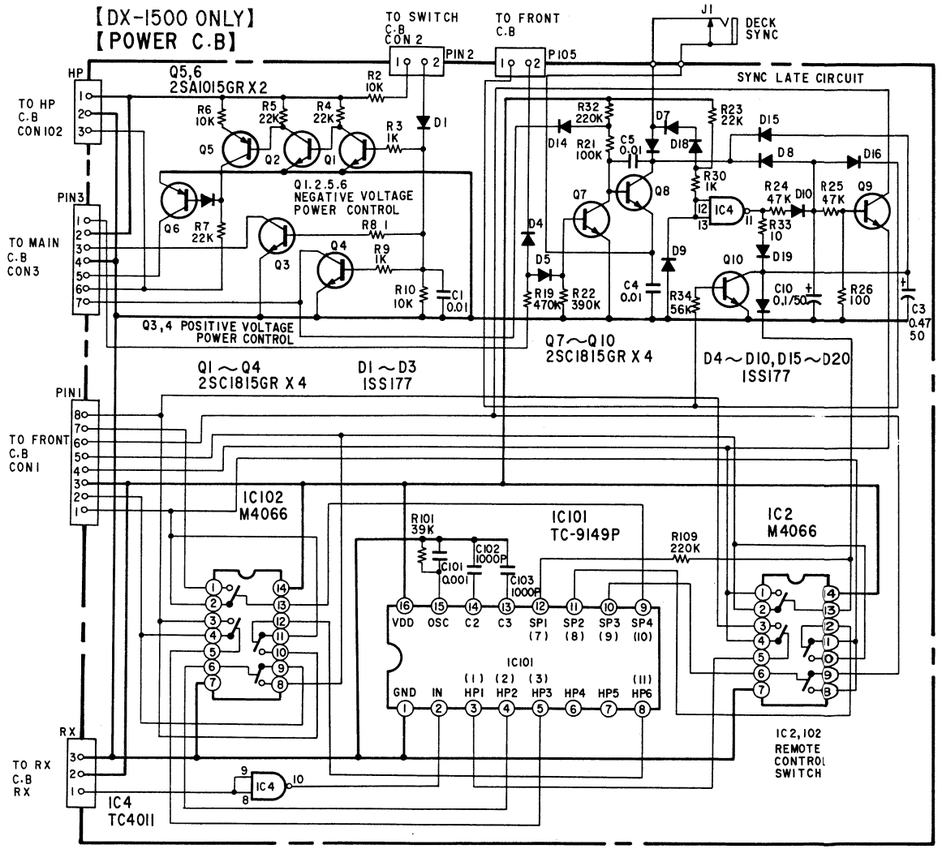
(DX-1500 ONLY)

Combination circuit board 84-715-610
- PCB-Front 84-715-611
- PCB-POWER 84-715-612
- PCB-SW 84-715-613
- PCB-PHONE 84-715-614
- PCB-RX 84-715-615

(DX-770 ONLY)

Combination circuit board 84-714-620
- PCB-Front 84-714-621
- PCB-POWER 84-714-622
- PCB-SW 84-714-623





NOTES (1) ■ Earth pattern ▒ Others pattern
(2) The voltage is the reference value measured with a tester (50 K ohms/V DC) when there are no signals.

【DX-1500 ONLY】

【REMOTE CONTROL】

Q201 2SA937 Q202 2SC2673 D201 SE307

Q201 Q202 D201 C201 47 UM-3 3V R201 10K R202 1 D203 D202 D201 C209 100P IC201 TC-9148P

IC201 pins: 16 VDD, 15 TX, 14 T̄, 13 C, 12 T3 (C3), 11 T2 (C2), 10 T1 (C1), 9 K6; 1 GND, 2 XT, 3 X̄T̄, 4 K1, 5 K2, 6 K3, 7 K4, 8 K5

X201 C202 100P C203 100P C204 100P C205 100 C206 100P C207 100P C208 100P

CLEAR MEMORY F SKIP F FWD B SKIP F BWD PLAY/PAUSE STOP

【PHONE C.B】

RV101 PHONE LEVEL J101 PHONE IC103 CN102 TO POWER C.B RX

CNJ301 LINE OUT R L

【MAIN C.B】

Q303

【RX C.B】

D101 L101 TO POWER C.B PH (BLU) (BRN) (BRN)

【DX-770 ONLY】
【POWER C.B】

J2 REMOTE 1 3 5 7 9 10 13

JK1 DECK SYNC

CON3 (BRN) 1 (RED) 3 (ORG) (BLK) 5 (BLU) (VIO) (WHT) 7

CON2 1 (RED) 2 (WHT)

CON1 8 7 5 3 1 (BRN) (BRN) (BRN) (BRN) (BRN) (BRN) (BRN) (RED)

【LOADING MOTOR C.B】 FORMER

M702 LOADING MOTOR 1-615-957 IC701 D701 S702 LIMIT S703 LOADING

【LOADING MOTOR C.B】 NEW

C702 M702 LOADING MOTOR

【SPINDLE MOTOR C.B】

C703 M703 SPINDLE MOTOR

【SLED MOTOR C.B】

C701 M701 SLED MOTOR

S702 LIMIT

【DX-1500 H ONLY】

SW1 240V 220V 120V VOLTAGE SELECTOR PTI

AC100V 50/60Hz AC CODE PTI POWER TRANSFORMER (RED) (BLK) (ORG) (BLU)

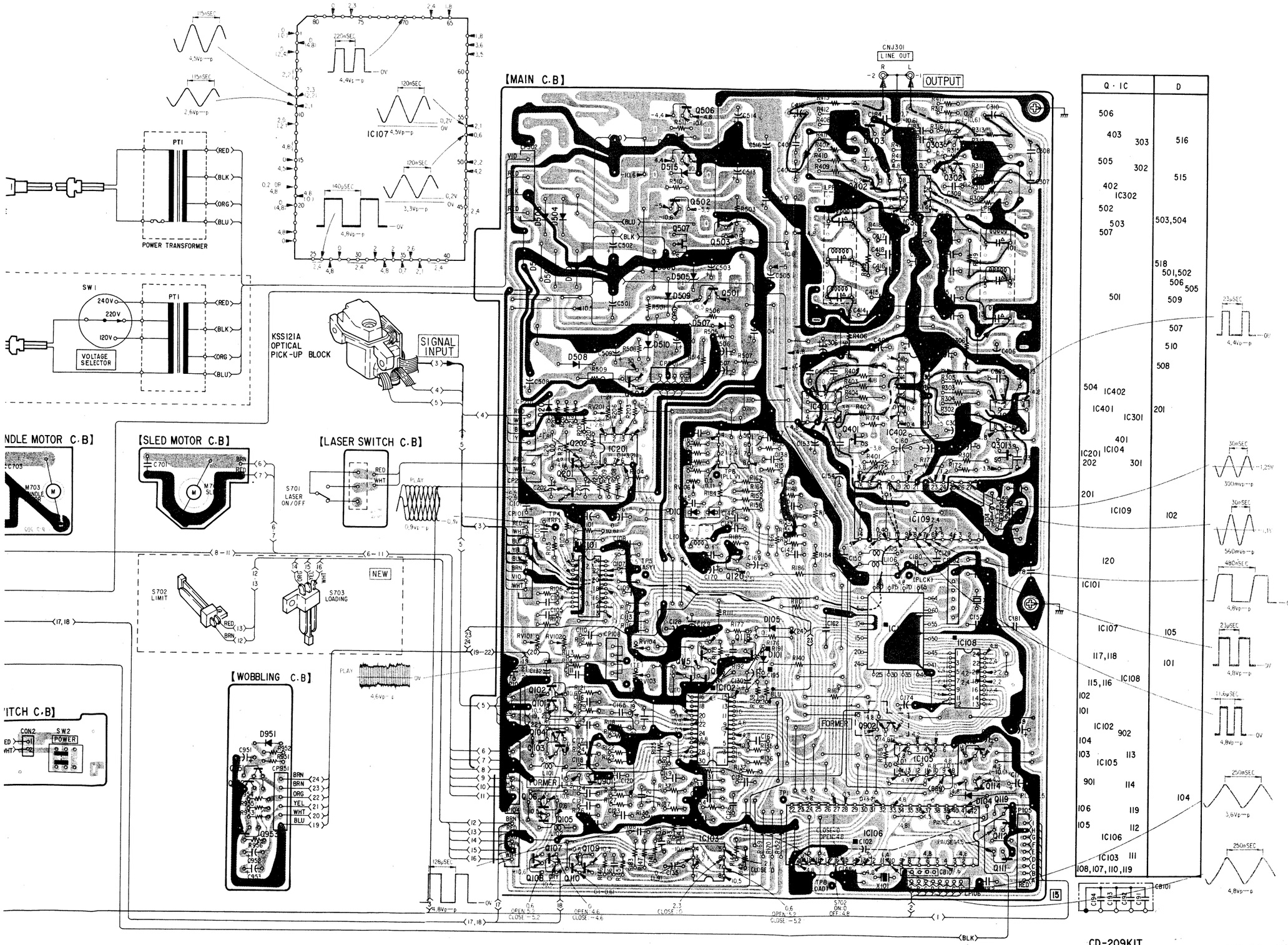
【FRONT C.B】

SW14 OPEN/CLOSE SW8 B SKIP SW7 F SKIP SW6 MEMORY SW5 CLEAR SW9 REPEAT SW10 TIME SW13 STOP SW12 PAUSE MEMORY/PLAY D13 PLAY D12 D11 PAUSE R29 R28 FL IC1 CP601 CP602 CON1 SW4 F BWD SW3 F FWD SW11 PLAY CHASSIS

【SWITCH C.B】

CON2 (RED) (WHT) SW2 POWER

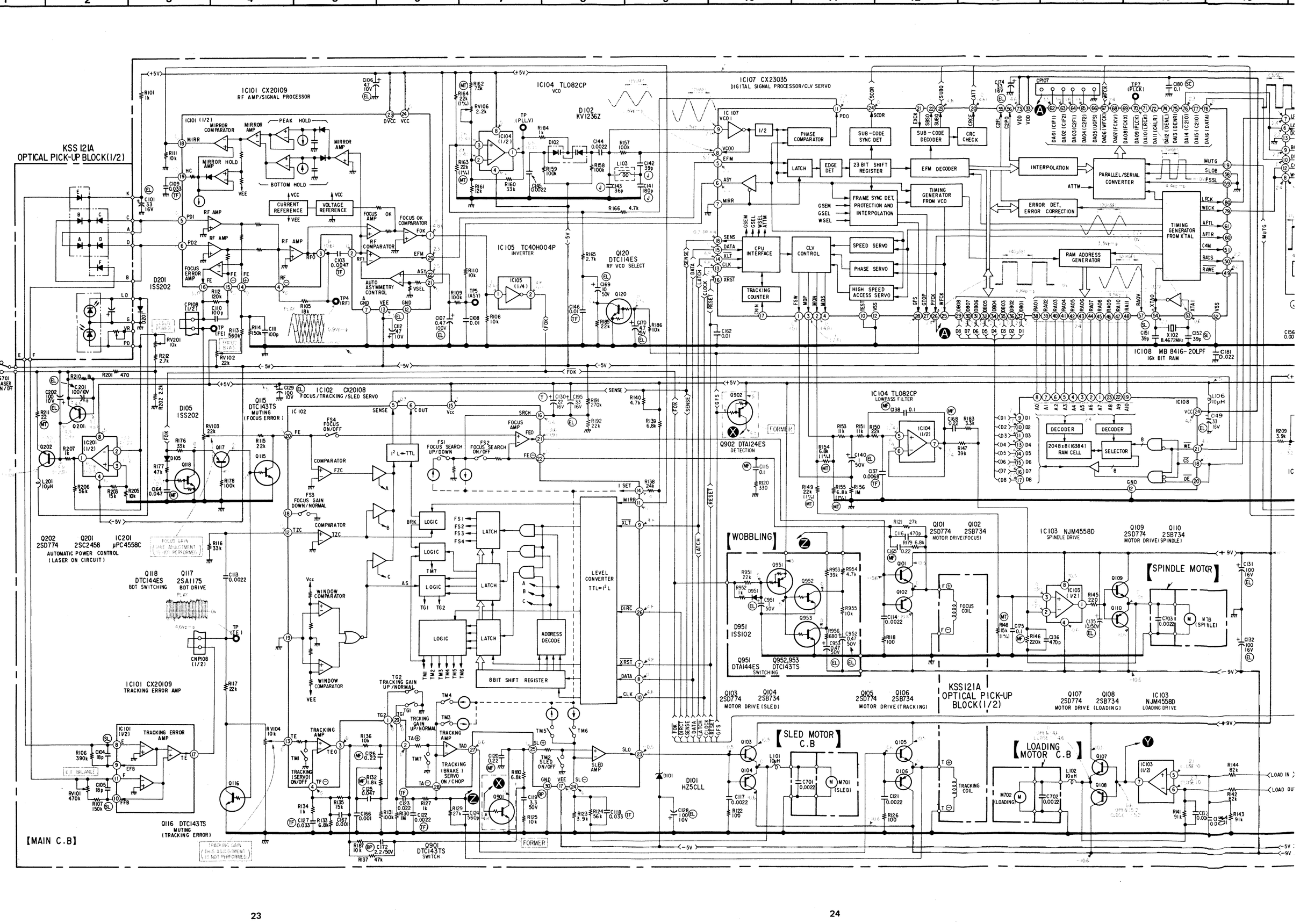
(17, 18)



Q · IC	D
506	
403	303
505	302
402 IC302	
502	
503	503,504
507	
	518
	501,502
	506 505
501	509
	507
	510
	508
504 IC402	
IC401	201
IC301	
401	
IC201 IC104	
202	301
201	
IC109	102
120	
IC101	
IC107	105
117,118	101
115,116 IC108	
102	
101	
IC102	902
104	
103 IC105	113
901	114
	104
106	119
105	112
IC106	
IC103	111
108,107,110,119	

NOTES (1) ■ Earth pattern ■ Others pattern
(2) The voltage is the reference value measured with a tester (50 K ohms/V DC) when there are no signals.

SCHEMATIC DIAGRAM-2 (DX-770, DX-1500 HB, UB, CB, EB, KB, GB model)



IC109 CX20017 D/A CONVERTER

IC301 μPC4082C INTEGRATOR

【RX C.B】

【SWITCH

【POWER C.B】

【FRONT C.B】

【SPINDLE MOTOR】

【LOADING MOTOR】

IC108 MB 8416-20LPF 16k BIT RAM

IC201 μPC4558D APC

IC105 TC40H004P INVERTER

IC106 MSM6404A-76RS (FORMER) MSM6404A-83RS (NEW) SYSTEM CONTROL

IC1 M54940P FLD DRIVE

IC401 μPC4082C INTEGRATOR

IC402 HD14053 SWITCH

IC301, 401 μPC4082C SAMPLE HOLD

IC302 NE5532P LINE AMP

Q301, 401 2SK152 DISCHARGE

Q302, 402 2SC2878 EMPHASIS

Q303, 403 2SC2878 MUTING

Q701 DTC143TS SWITCHING

Q504 2SD774 VOLT.REG.

Q501 2SD880 VOLT. REG.

Q503 2SA1175 VOLT REG.

Q502 2SB834 VOLT. REG

Q505 2SD809 VOLT REG

Q506 2SB731 VOLT. REG

Q507 2SK246 VOLT. REG.

Q109 2SD774 2SB734 MOTOR DRIVE(SPINDLE)

Q110 2SB734 NJM4558D LOADING DRIVE

Q108 2SB734 VE (LOADING)

Q111, 112 DTC144ES LED DRIVE

Q119 DTC144ES LED DRIVE

Q113 DTA144ES EMPHASIS DRIVE

Q114 DTA144ES MUTING DRIVE

D701 1SS202

D507 1SS202

D509 1IE2

D508 1IE2

D510 HZ30-IL

D506,518 1SS202

D505 HZ6BIL

D515,516 HZ6BIL

D501-504 10E2

D104 1IE2

D12 GL5PG5

D11 GL5HY5

D13 GL5PG5

D101 PH309

PT1

IC4 TC4011

IC105 TC40H004P SCHMITT CIRCUIT

IC105 TC40H004P INVERTER

IC105 TC40H004P INVERTER

IC103 NJM4558D LOADING DRIVE

IC1601

SEGMENT DRIVER

DIGIT DRIVER

SEGMENT DECODER

SCAN COUNTER

OSC

MPX

40 BIT DATA LATCH

5 BIT x 8 SHIFT REGISTER

8 COUNTER

PARALLEL/SERIAL CONVERTER

TIMING GENERATOR FROM XTAL

TTL-ECL INTERFACE CIRCUIT

HIGHER ORDER 8BIT SHIFT REGISTER LATCHES COUNTER

LOWER ORDER 8 BIT SHIFT REGISTER LATCHES COUNTER

TIMING GENERATOR

CLOCK BUFFER

ANALOG SWITCH DRIVE CIRCUIT

DISCHARGE DRIVE CIRCUIT(L)

DISCHARGE DRIVE CIRCUIT(R)

256:1 CONSTANT CURRENT SOURCE

DECODER

SELECTOR

IC1601

DISC SCAN REPEAT→ ALL A B

8G 7G 6G 5G 4G 3G DP 2G 1G

S702 (LIMIT) ON: TOP-S REACHES THE INNER POSITION

S703 (LOADING) IN OUT

S702 (LIMIT) ON: TOP-S REACHES THE INNER POSITION

S703 (LOADING) IN OUT

SW1 PLAY

SW2 PAUSE

SW3

SW4

SW5 CLEAR

SW6 MEMORY

SW7 ASMS

SW8

SW9 REPEAT

SW10 TIME

SW11 PLAY

SW12 PAUSE

SW13 STOP

SW14 OPEN/CLOSE

POWER ON SW2 STANDBY

LINE OUT (L)

LINE OUT (R)

FORMER

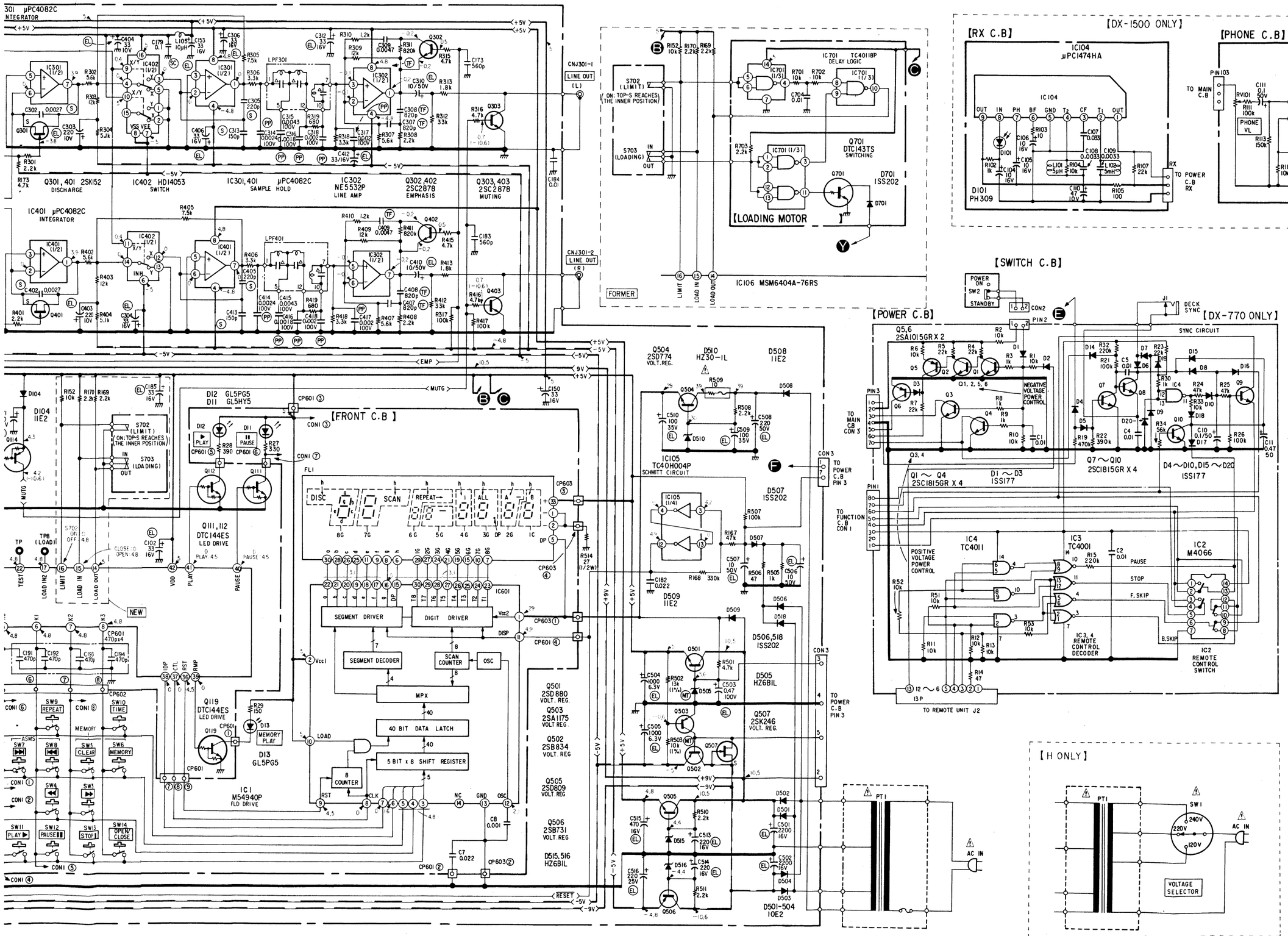
TO MAIN C.B CON 3

TO POWER C.B CON 3

TO FUNCTION C.B CON 1

TO REMOTE UNIT J2

AC IN


IC301 µPC4082C INTEGRATOR
IC401 µPC4082C INTEGRATOR
IC402 HD14053 SWITCH
IC301, 401 µPC4082C SAMPLE HOLD
IC302 NE5532P LINE AMP
Q302,402 2SC2878 EMPHASIS
Q303,403 2SC2878 MUTING
Q301, 401 2SK152 DISCHARGE
LPF301
LPF401
CNJ301-1 LINE OUT (L)
CNJ301-2 LINE OUT (R)
FORMER
S702 (LIMIT) (ON: TOP-S REACHES THE INNER POSITION)
S703 (LOADING)
IC701 TC40118P DELAY LOGIC
Q701 DTC143TS SWITCHING
D701 1SS202
LOADING MOTOR
IC106 MSM6404A-76RS
LIMIT
LOAD IN
LOAD OUT
【RX C.B】
【DX-1500 ONLY】
IC104 µPC1474HA
D101 PH309
TO POWER C.B RX
【PHONE C.B】
IC103 NJM4556
TO MAIN C.B
PHONE VL
R ch
TO POWER C.B HP
【POWER C.B】
Q5,6 2SA1015GR X 2
Q1, 2, 5, 6
NEGATIVE VOLTAGE POWER CONTROL
Q1 ~ Q4 2SC1815GR X 4
D1 ~ D3 1SS177
TO MAIN C.B CON 3
TO FUNCTION C.B CON 1
POSITIVE VOLTAGE POWER CONTROL
IC4 TC4011
IC3 TC4001
IC2 M4066
PAUSE
STOP
F. SKIP
B. SKIP
IC3, 4 REMOTE CONTROL DECODER
IC2 REMOTE CONTROL SWITCH
TO REMOTE UNIT J2
【SWITCH C.B】
POWER ON SW2 STANDBY
【DX-770 ONLY】
DECK SYNC
SYNC CIRCUIT
Q7 ~ Q10 2SC1815GR X 4
D4 ~ D10, D15 ~ D20 1SS177
【FRONT C.B】
D12 GL5PG5
D11 GL5HY5
PLAY
PAUSE
Q111, 112 DTC144ES LED DRIVE
Q119 DTC144ES LED DRIVE
D13 GL5PG5
MEMORY PLAY
IC1 M54940P FLD DRIVE
SEGMENT DRIVER
DIGIT DRIVER
SEGMENT DECODER
SCAN COUNTER
OSC
MPX
40 BIT DATA LATCH
5 BIT x 8 SHIFT REGISTER
8 COUNTER
IC601
IC105 TC40H004P SCHMITT CIRCUIT
Q504 2SD774 VOLT. REG.
D510 HZ30-IL
D508 11E2
D509 11E2
D507 1SS202
D506,518 1SS202
D505 HZ6BIL
D501-504 10E2
Q501 2SD880 VOLT. REG.
Q503 2SA1175 VOLT. REG.
Q502 2SB834 VOLT. REG
Q505 2SD809 VOLT. REG
Q506 2SB731 VOLT. REG
Q507 2SK246 VOLT. REG.
D515,516 HZ6BIL
PT1
AC IN
【H ONLY】
SW1
240V
220V
120V
VOLTAGE SELECTOR

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-1 disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

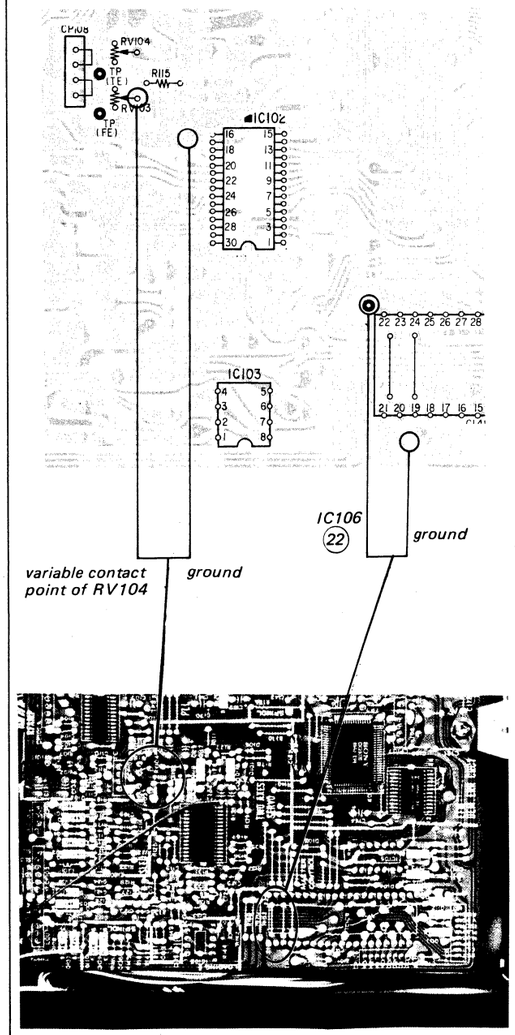
DX-770, DX-1500 H, U, C, E, K, G

Adjustment Mode

- Laser power adjustment (1), (3) and focus bias adjustment
  . . . . Ground IC106 pin (22) (TEST) on main board.
- E-F balance adjustment
  . . . . Ground IC106 pin (22) (TEST) and the variable contact point of RV104 (T.E) on main board.

Note: After adjustment, be sure to remove the lead wires connected above.

Adjustment Location: main board

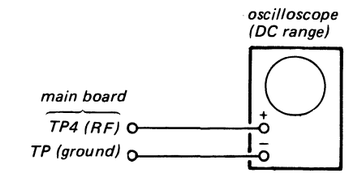


- Adjustment should be made in order of Laser p

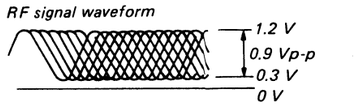
Laser Power Adjustment (1)

This adjustment should be made when TOP (T-type Optical Pick-up).

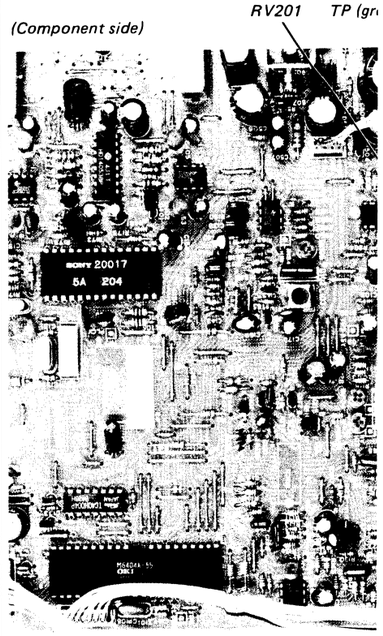
Procedure:



1. Connect oscilloscope to test points TP TP(ground).
2. Put set into adjustment mode. (See pa
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ butto
5. Adjust RV201 so that the waveform is the figure below.



Adjustment Location: main board

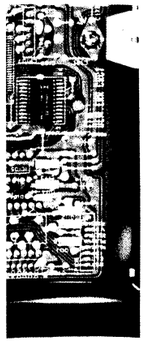


.d focus bias

;T) on main

;T), and the
104 (T.E) on

the lead wires

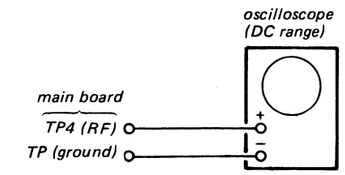


- Adjustment should be made in order of Laser power (1), Focus bias and Laser power (2).

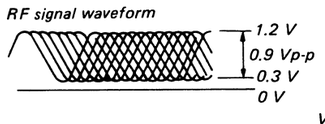
Laser Power Adjustment (1)

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

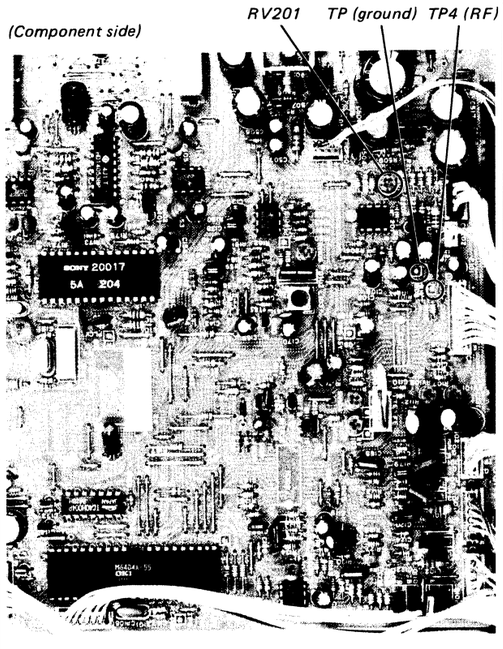
Procedure:



1. Connect oscilloscope to test points TP4 (RF) and TP(ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV201 so that the waveform is as shown in the figure below.



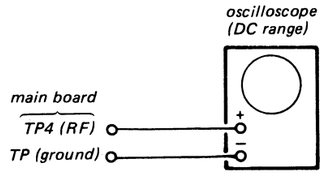
Adjustment Location: main board



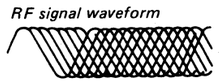
Focus Bias Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

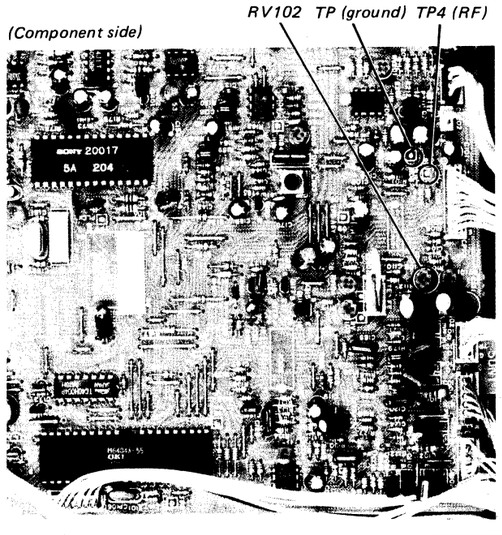
Procedure:



1. Connect oscilloscope to test points TP4 (RF) and TP (ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV102 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape " ◇ " can be clearly distinguished at the center of the waveform.



Adjustment Location: main board



Laser Power Adjustment (2)

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

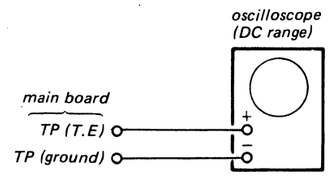
After laser power adjustment (1) and focus bias adjustment (2), check laser power agian.

1. Check the waveform by the same procedure of laser power adjustment (1) on page 30.
2. If it is out of specification, adjust RV201 again.
3. After check or adjustment, cancel the adjustment mode. (See page 30.)

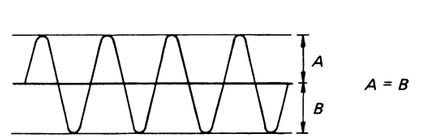
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

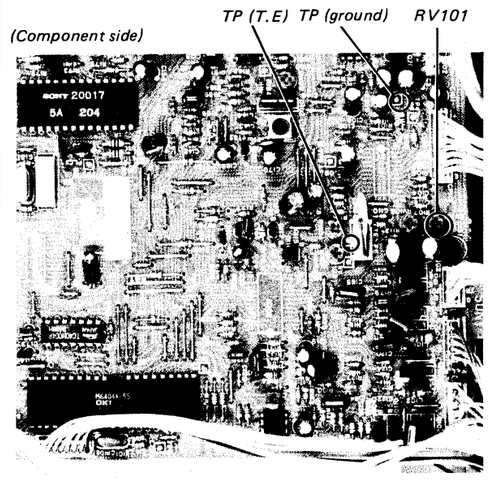
Procedure:



1. Connect oscilloscope to test point TP (T.E) and TP (ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV101 so that the traverse waveform is symmetrical above and below.
6. After adjustment, cancel the adjustment mode. (See page 27.)



Adjustment Location: main board



RF PLL F
Check

Procedure

1. Groun
2. Conne
TP (gr
3. Turn I
4. Adjust
0 ±50
5. Conne
(PLCK
6. Adjust
counte
. . . .
7. Remo
groun
8. Put dis
9. Confir
4.3218

Adjustme

(Componen

TP7

DX-770, DX-1500 H, U, C, E, K, G

de when replacing

:illoscope
C range)

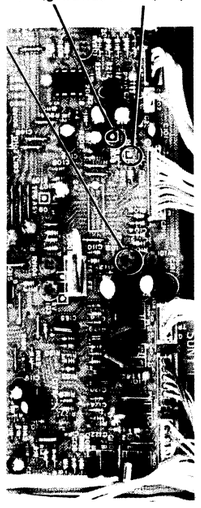
)ints TP4 (RF) and

(See page 29.)

▷ button.

. waveform eye pat-
:ximum. Optimum
' ◇ " can be clearly
ıe waveform.

TP (ground) TP4 (RF)



Laser Power Adjustment (2)

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

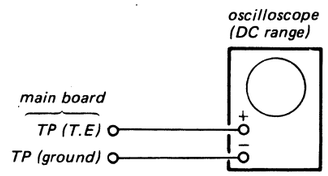
After laser power adjustment (1) and focus bias adjustment (2), check laser power agian.

1. Check the waveform by the same procedure of laser power adjustment (1) on page 30.
2. If it is out of specification, adjust RV201 again.
3. After check or adjustment, cancel the adjustment mode. (See page 30.)

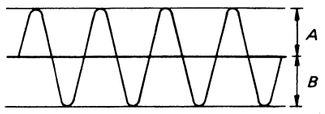
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:



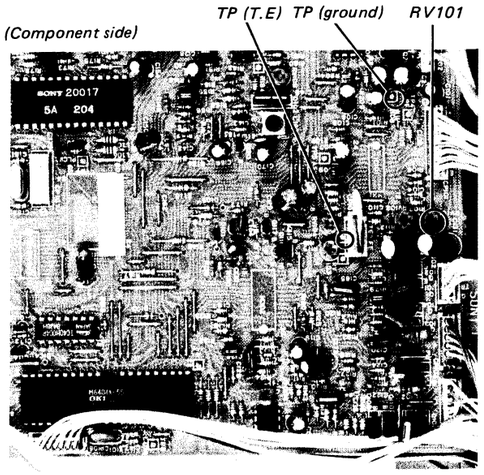
1. Connect oscilloscope to test point TP (T.E) and TP (ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV101 so that the traverse waveform is symmetrical above and below.
6. After adjustment, cancel the adjustment mode. (See page 27.)



VOLT/DIV: 1 V
TIME/DIV: 1 ms

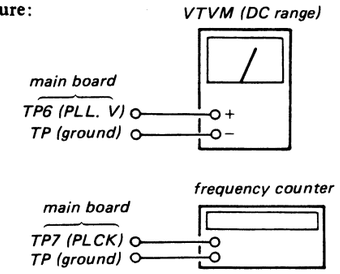
Adjustment Location: main board

(Component side)



RF PLL Frequency Adjustment /Lock Frequency Check

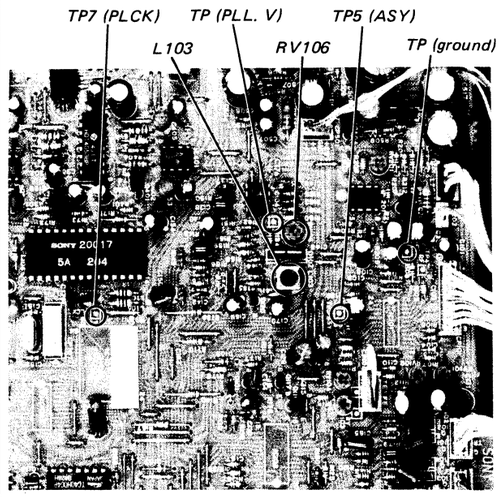
Procedure:



1. Ground test point TP5 (ASY).
2. Connect VTVM to test points TP6 (PLL.V) and TP (ground).
3. Turn POWER switch on.
4. Adjust RV106 so that the reading on VTVM is 0 ±50 mV.
5. Connect the frequency counter to test points TP7 (PLCK) and TP (ground).
6. Adjust L103 so that the reading on frequency counter is 4.2818 MHz.
   . . . . (RF PLL frequency adjustment)
7. Remove lead wire connecting TP5 (ASY) and ground.
8. Put disc (YEDS-1) in and press ▷ button.
9. Confirm that the reading on frequency counter is 4.3218 MHz.

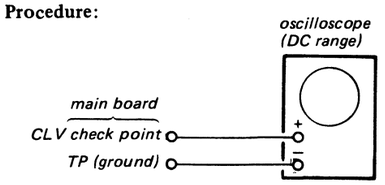
Adjustment Location: main board

(Component side)

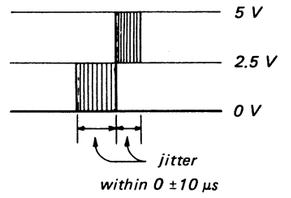


CLV Phase Lock Check

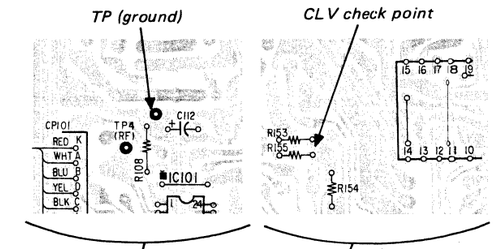
Procedure:



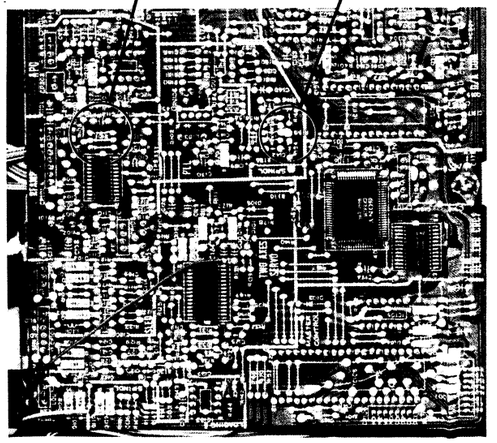
1. Connect oscilloscope to CLV check point (the point between IC107 pin ③ and R154) and TP (ground).
2. Turn POWER switch on.
3. Put disc (YEDS-1) in and press ▷ button.
4. Check the waveform is as shown in the figure below.



Adjustment Location: main board



(Conductor side)



REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

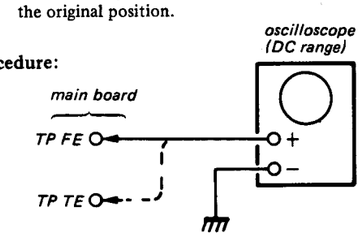
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮ ⏭buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP→▷PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

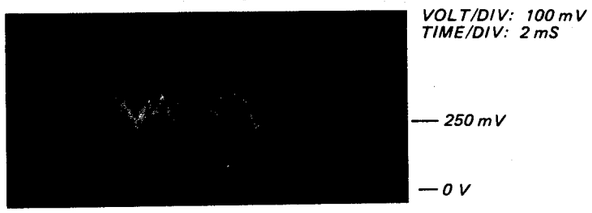
Procedure:



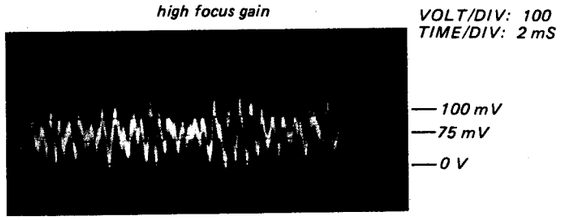
1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-1) and press ▷PLAY button.
3. Connect oscilloscope to main amp board TP FE.
4. Adjustment RV103 so that the waveform is as shown in the figure below. (focus gain adjustment)

- Incorrent Examples (DC level changes more than on adjusted waveform)

low focus gain



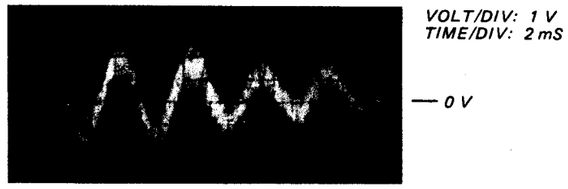
high focus gain



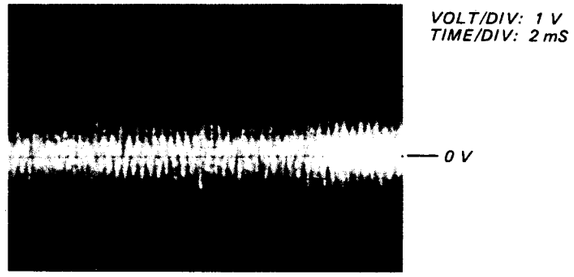
5. Connect oscilloscope to main board TP TE.
6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)

- Incorrect Examples (fundamental wave appears)

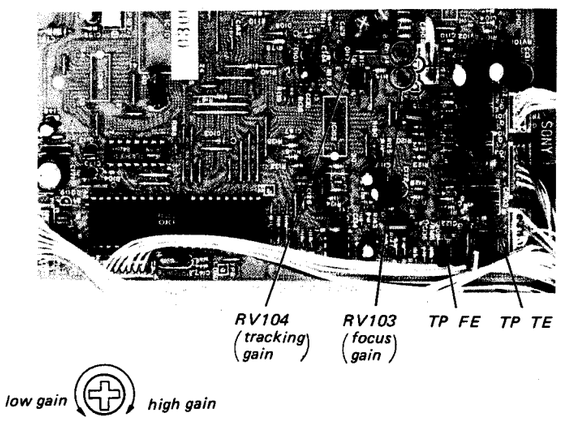
low tracking gain



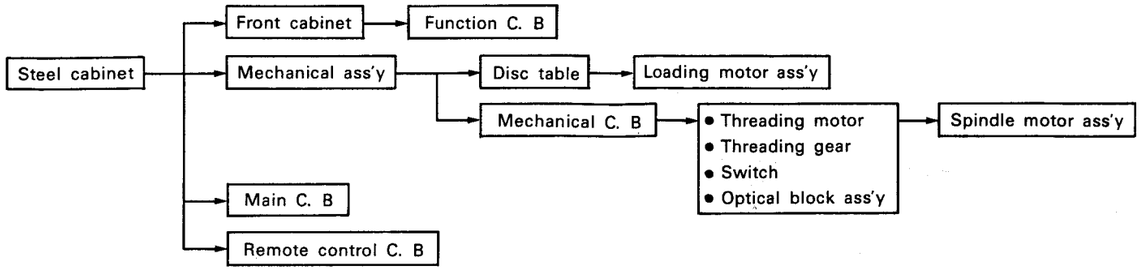
high tracking gain
(higher fundamental wave than for low gain)



Adjustment Location: main board



DISASSEMBLY INSTRUCTIONS



1. Removal of Mechanism A'ssy

1) Remove 3 screws.

2. Removal of Disc Table

1) Remove a chucking spring.
2) Remove a chucking arm while releasing the lock by pushing the claw. (See Figure-1)

Release the chucking arm lock by pushing the claw in the direction of arrow.

(Note: When the assembling, lock by pushing the claw in the inverse direction.)

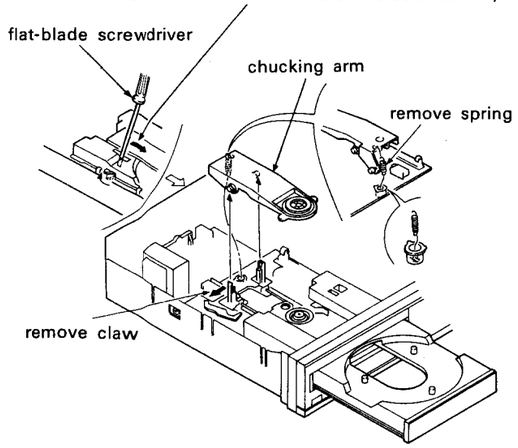


Fig-1

3) Remove the disc table while releasing the claws at six positions. (See Figure-2)

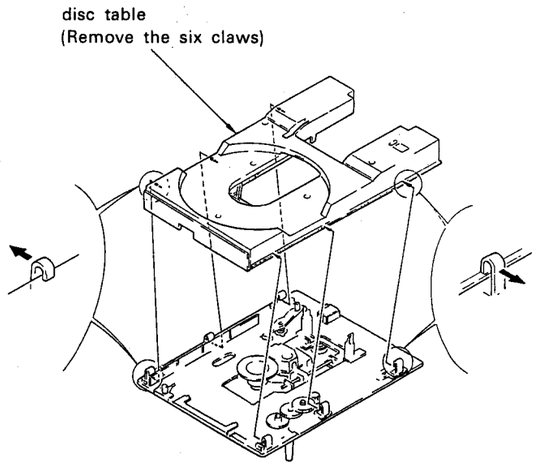


Fig-2

3. Removal of Loading Motor A'ssy

1) Remove 2 screws. (See Figure-3)

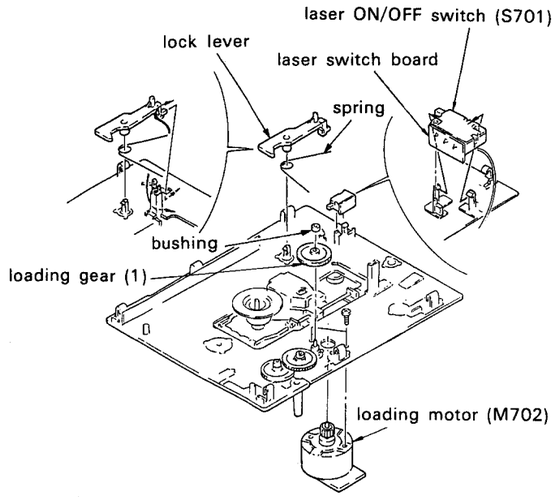


Fig-3

4. Removal of Mechanical Board

1) Remove 3 screws. (See Figure-4)

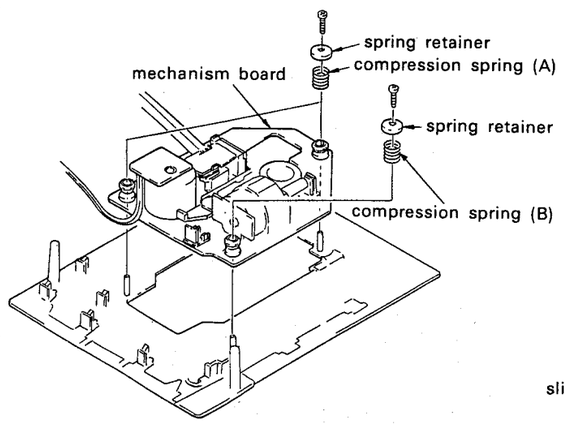


Fig-4

5. Removal of Thread Motor

1) Remove a screw and remove claws at 2 positions. (See Figure-5)

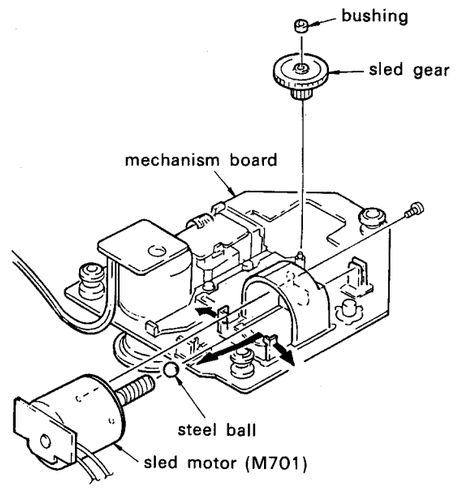


Fig-5

6. Removal of Optical Block Ass'y

1) Remove 2 pieces of slide shafts while pushing the claw. (See Figure-6)

Note) Remove the rack a'ssy which is on the optical block a'ssy, and mount it again after replacement of the optical block a'ssy has been completed.

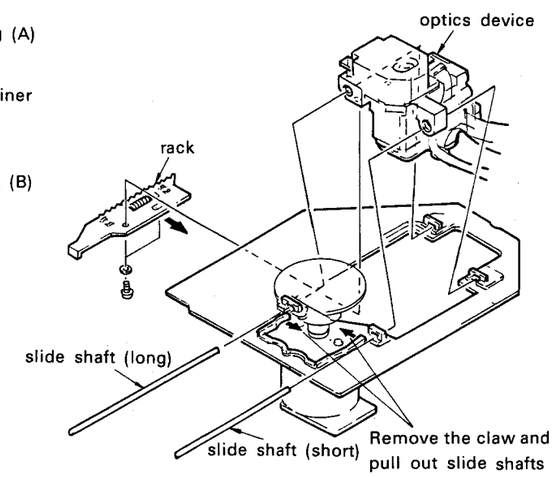


Fig-6

7. Removal of Spindle Motor A'ssy

1) Remove the mechanical board. (See Figure-4)
2) Remove the thread motor, optical block a'ssy, thread gear, and switch. (See Figure-5 and 6)

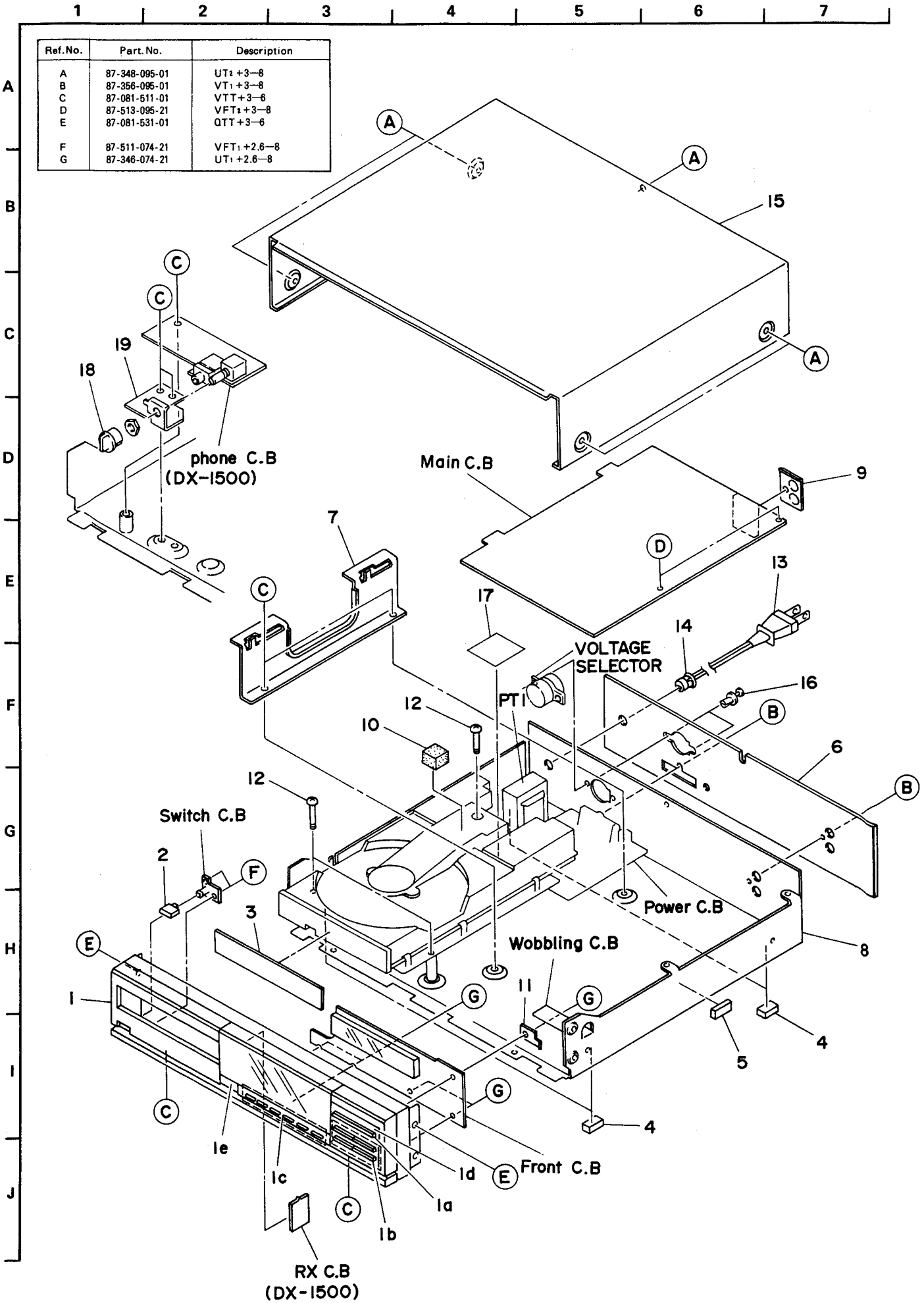
Note) Be sure to mount these parts again after the spindle motor a'ssy has been replaced.

37 - leer

☆ **MEMO** ☆

EXPLODED VIEW-1

Ref.No.	Part.No.	Description
A	87-348-095-01	UT2 +3—8
B	87-356-095-01	VT1 +3—8
C	87-081-511-01	VTT+3—6
D	87-513-095-21	VFT2+3—8
E	87-081-531-01	QTT+3—6
F	87-511-074-21	VFT1+2.6—8
G	87-346-074-21	UT1 +2.6—8



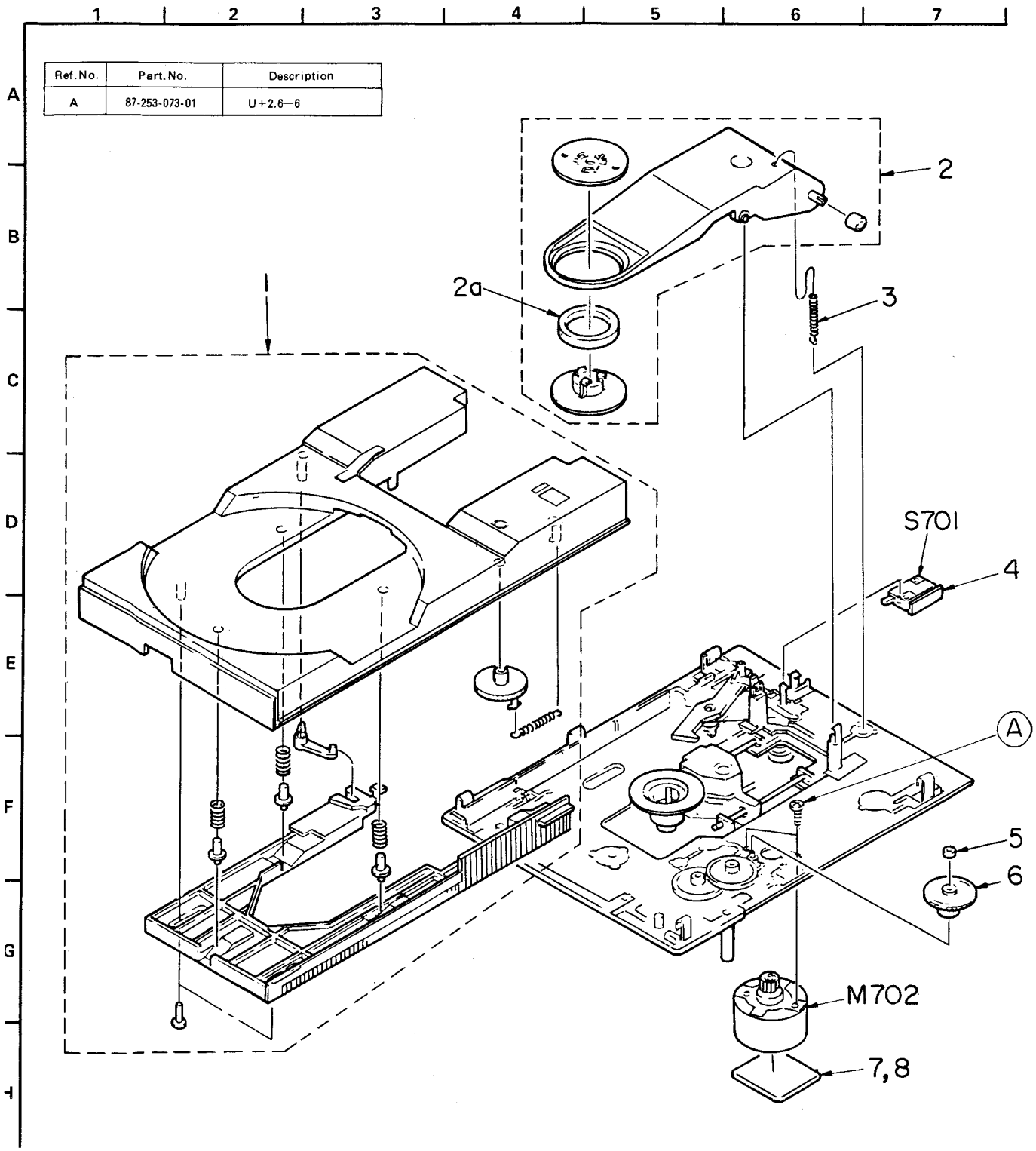
MECHANICAL PARTS LIST

- ※-mark in this part list shows exclusive part.
- ★-mark means less required items and availabilities may be limited.
- No availability part is warked with ——— in Part No. list.

Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty
	1-1	★84-714-001	FRONT CABINET Ass'y F (DX-770) (EXCEPT U)	※	1
		★84-714-030	FRONT CABINET Ass'y FU (DX-770) (U only)	※	1
		★84-715-001	FRONT CABINET Ass'y F R (DX-1500) (EXCEPT U)	※	1
		★84-715-207	FRONT CABINET Ass'y F RU (DX-1500) (U only)	※	1
	1a	★81-714-007	PUSH-KEY A (EXCEPT U)	※	1
		★81-714-027	PUSH-KEY AU (U only)	※	1
	1b	★84-714-008	PUSH-KEY B (EXCEPT U)	※	1
		★84-714-028	PUSH-KEY BU (U only)	※	1
	1c	★84-714-009	PUSH-KEY D	※	1
	1d	★84-714-010	NAME PLATE, CONTROL	※	1
	1e	★84-714-017	PUSH-KEY C (EXCEPT U)	※	1
		★84-714-029	PUSH-KEY CU (U only)	※	1
	1-2	★84-714-013	BUTTON, POWER	※	1
	1-3	★84-714-025	PANEL C Ass'y (DX-770)	※	1
		★84-715-004	PANEL C Ass'y EX (DX-1500)	※	1
	1-4	★84-714-024	FOOT	※	4
	1-5	—	G CUSHION 10×25×3		1
	1-6	—	JACK PLATE		1
	1-7	—	HOLDER, CIRCUIT BOARD		1
	1-9	—	EARTH PLATE D, PIN		1
	1-10	—	CNSHION		1
	1-11	—	EARTH PLATE E		1
	1-12	★94-910-416	SCREW, LOADING CHASSIS		3
	1-13	★87-034-958	AC POWER CORD (H, HU only)		1
		★87-034-578	AC POWER CORD (U, C only)		1
		★87-034-877	AC POWER CORD (E only)		1
		★87-034-975	AC POWER CORD (K only)		1
		★87-034-892	AC POWER CORD (G only)		1
	1-14	—	CORD BUSHING		1
	1-15	★81-748-020	STEEL CABINET T		1
	1-16	★87-085-090	NYLON RIVET 3—6.5 (H, HU only)		2
	1-17	—	IUSULATION SHEET (E, K, G only)		1
	1-18	★82-100-015	KNOB, BIAS (DX-1500)		1
	1-19	—	HOLDER, A VR (DX-1500)		1

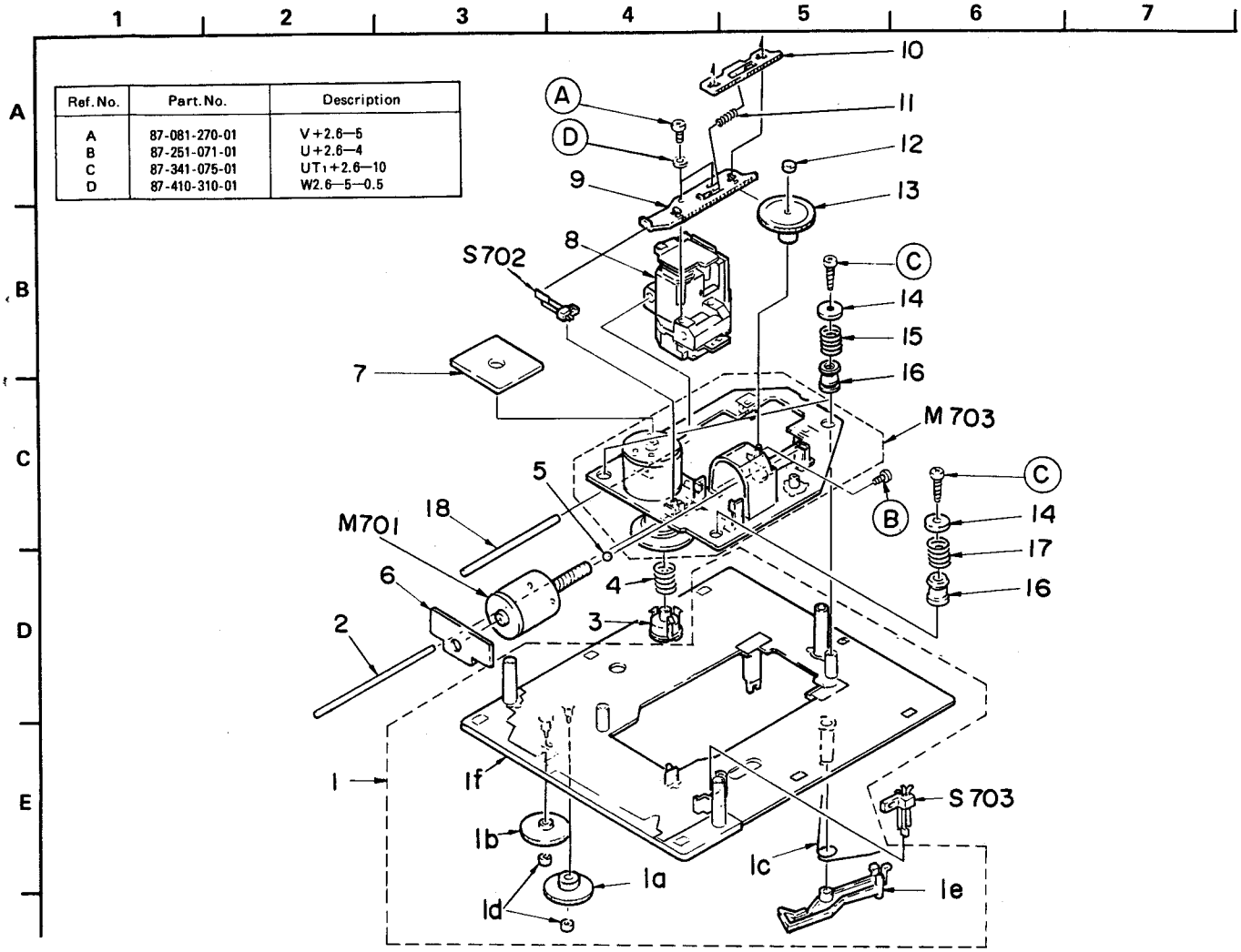
EXPLODED VIEW-2

Ref.No.	Part.No.	Description
A	87-253-073-01	U+2.6—6



Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty
	2-1	★9X-491-041	DISC TABLE Ass'Y		1
	2-2	★9A-460-414	CHUCKING ARM Ass'y		1
	2a	★91-452-340	MAGNET		1
	2-3	★94-910-428	TENSION SPRING, CHUCKING		1
	2-4	—	PC BOARD, LD SWITCH		1
	2-5	★94-910-418	BUSHING φ4		1
	2-6	★94-910-497	GEAR 1, LOADING		1
	2-7	—	PC BOARD, LO MOTOR		1
	2-8	—	MOUNTED PCB, LOADING MOTOR		1

EXPLODED VIEW-3



Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty
	3-1	★9X-491-040	LOADING CHASSIS Ass'y		1
	1a	94-910-402	GEAR 2, LOADING		1
	1b	94-910-403	GEAR 3, LOADING		1
	1c	★94-910-412	SPRING, LOCK LEVER		1
	1d	★94-910-418	BUSHING ϕ4		2
	1e	★94-910-434	LOCK LEVER		1
	1f	—	LOADING CHASSIS, OUTSERT		1
	3-2	—	SHAFT, SLIDE		1
	3-3	★94-910-437	CAP, CENTER RING		1
	3-4	★94-910-427	SPRING, COMPRESSION		1
	3-5	★87-073-008	STEEL BALL 2.5		1
	3-6	—	PC BOARD, SL MOTOR		1
	3-7	—	PC BOARD, SP MOTOR		1
	3-8	98-848-023	DEVICE, OPTICS		1
	3-9	★94-910-425	RACK A		1
	3-10	★94-910-442	RACK B		1
	3-11	★94-910-462	SPRING, COMPRESSION		1
	3-12	★94-910-418	BUSHING ϕ4		1
	3-13	★94-910-432	GEAR, SLED		1
	3-14	★94-910-414	SPRING BEARING		3
	3-15	★94-910-423	COMPRESSION SPRING, FLOATING A		2
	3-16	★94-910-498	RUBBER, FLOATING		3
	3-17	★94-910-463	COMPRESSION SPRING, FLOATING B		1
	3-18	—	SHAFT, SLIDE		1

■ACCESSORIES/PACKAGE LIST

DX-770

Part No. Changed to	Ref.No.	Part.No.	Description	Common Model	Q'ty	
	1	★84-714-904	IUSTRUCTION BOOKLET	※	1	
	2	★84-714-951	SYNCRATE CORD MMW-44K	※	1	
	3	★87-032-845	SIEMENS PLUG (H only)		1	
	4	★87 034-978	CONNECTION CORD CW-254BSK		1	

DX-1500

Part No. Changed to	Ref.No.	Part.No.	Description	Common Model	Q'ty	
	1	★84-715-904	IUSTRUCTION BOOKLET	※	1	
	2	★84-714-951	SYNCRATE CORD MMW-44K	DX-770	1	
	3	★84-715-951	RC-T1500	※	1	
	4	★87-034-978	CONNECTION CORD CW-254BSK		1	
	5	★87-032-845	SIEMENS PLUG (H only)		1	

AIWA Co., Ltd. Tokyo Japan

Printed in japan